MEDICAL LIBRARY

MEDICAL LIBRARY OCT 27 1932

The

British Medical Journal

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION

Including an Epitome of Current Medical Literature

WITH SUPPLEMENT

No. 3745 SATURDAY, OCTOBER 15, 1932 Price 1/3

HALIVEROL

(Halibut-Liver Oil with Viosterol)

HALIVEROL is the oil extracted by Parke, Davis & Co. from halibut livers by a special process. It contains 60 times as much vitamin A as cod-liver oil; and its vitamin D content is adjusted with irradiated ergosterol to 250 times that of cod-liver oil. Indicated in all conditions in which cod-liver oil is prescribed, but taken in drops instead of teaspoonful doses.

1 minim of Haliverol is the therapeutic equivalent of 1 teaspoonful of Cod-Liver Oil

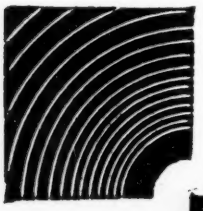
Supplied in 5 c.c. bottles, with dropper; also in boxes of 25 capsules, each containing 3 minims.

Further particulars will be supplied on request

PARKE, DAVIS & CO., 50, BEAK STREET, LONDON, W.1

Laboratories: Hounslow, Middlesex. *Inc. U.S.A.: Liability Ltd.*

ISSUED WEEKLY] [COPYRIGHT] [REGISTERED AS A NEWSPAPER



ANTIPHLOGISTINE

BRAND

DRESSING

as an adjuvant in

Physiotherapy

THE use of diathermy for the alleviation of pain is one of the most successful measures in modern treatment. Its effect is enhanced and prolonged by the application of Antiphlogistine Dressing.

By its glycerine content it produces a relaxant effect, by its osmosis it absorbs the exudates and by its plasticity, which promotes rest and comfort, Antiphlogistine Dressing is the ideal adjuvant in the diathermic treatment of the various forms of neuritis, traumatisms, sciatica and of all other rheumatic conditions.

Antiphlogistine Dressing does not supplant diathermic treatment, but, rather, should be co-ordinated with it.

•

Sample and literature upon request

THE DENVER CHEMICAL MFG. CO.
London, E. 3.

A Paper

ON

INDICATIONS FOR, AND RESULTS OF, REMOVAL OF THE SPLEEN*

BY

THE RIGHT HON. LORD DAWSON OF PENN, P.C., G.C.V.O., K.C.B., M.D., F.R.C.P.

May I express alike the honour and pleasure I feel at being the opener of this important discussion on splenectomy. In my view this morning's proceedings have as their aim the pooling of knowledge and experience. There are only three diseases, outside trauma and rare tumours, in which splenectomy has proved to be justified—acholuric jaundice, purpura haemorrhagica, and splenic anaemia.

SPLENECTOMY IN ACHOLURIC JAUNDICE

This method of treatment is so accepted and so dramatic in result that I will devote myself to certain considerations which the study of it has convinced me are important. The spleen would appear to be an area of concentration along the line of the reticulo-endothelial system. Its functions seem easily assumed by other parts of the line, for its removal in normal animals and in man, following trauma, produces no physiological upset. On the other hand, in a few cases of acholuric jaundice its removal is inadequate to check the excessive red cell destruction.

Can splenic tissue, like marrow, grow up in outside positions? We are all acquainted with accessory spleens, but there is a case reported in which, years after splenectomy, as many as 300 nodules were found scattered in the omentum.[1] In haemolytic icterus we know that not only over-production but actual hypertrophy of marrow takes place, for in some instances extra-medullary nodules of marrow have been found. In fact, the subjects of acholuric jaundice are active and well only at a cost to their marrows which should not be incurred.

Plea for Early Operation

May it not be laid down that every case of acholuric jaundice should be treated by splenectomy unless there are special reasons to the contrary? If this were accepted, patients would be operated on when young (not younger than 12 years if possible), and the risks would be minimal; for surgeons, I think, will agree that in youth perisplenic adhesions are rare, and delivery of the spleen is easier. That the jaundice is faint, or the patient vigorous, is not a reason against splenectomy. Vigour is often maintained at the expense of over-production in the bone marrow, as shown by deficiency in red cells and a high reticulocyte count. It is curious how in this disease quite a considerable deficiency in the red cell count will exist without any symptoms. Patients with counts as low as 3,000,000 red cells and a colour index well under 1 will be playing their parts in the world. Is it because the average age of the red cells is younger and their physiological value correspondingly higher? It is the doing of overtime by the bone marrow which matters. This may result occasionally in a sudden exhaustion, followed by acute anaemia and death. More often, however, the patient goes through life until, under the stress of ill-health or illness, the overworked marrow cannot keep pace, production of red cells drops behind, and a patient presents himself or herself as a case of severe anaemia, and has perhaps lost and even forgotten the jaundice of years ago.

Let me cite an example. A patient, aged 53, came to hospital with severe anaemia and a palpable spleen, but without noticeable jaundice. The clinical picture at first sight bore a close resemblance to that of pernicious anaemia. Inquiry brought out that in her schooldays she was jaundiced, and that she and her sister were known as the "yellow sisters." Her bone marrow was worn out and had become aplastic. It was too late for splenectomy. She died.

Other Considerations

This brings me to my next point. The presenting features of the disease are not constant in appearance. Jaundice may be absent or the spleen may not be palpable, or, again, the fragility may not be increased. Take a family I have described elsewhere.[2] The mother is a typical case. I watch her with some anxiety, though her red count is fairly well maintained. She had three children—the eldest had an icteric tinge, the other two had no apparent jaundice. The two younger were attacked by an acute anaemia at the ages of 3½ and 8 years. The former died, the latter recovered. A thorough examination of the blood keeps one straight, and is essential.

When the gall-bladder is involved, what should be the plan of operation? If the bone marrow is not exhausted and the patient not past the prime of life, both the spleen and the gall-bladder can be dealt with at the same operation, provided examination does not disclose a spleen difficult to remove on account of adhesions. If the operation should be in two stages, I suggest splenectomy be performed first, because the removal of the strain on the marrow is the urgent need, and the gall-bladder is seldom infected.

Should blood transfusion precede splenectomy? Here I venture to suggest caution. The most careful typing notwithstanding, transfusion will in some cases markedly increase the jaundice and lead to scanty urine and threatening uraemia. I have seen patients go almost black after transfusion. A patient of mine belonging to the senior of three generations of haemolytic icterus was operated on by Lord Moynihan for the removal of gall-stones. To combat the anaemia blood transfusion was employed. The jaundice, as an immediate result, deepened and darkened, and the patient died. In those cases in which agglutination occurs despite every precaution in typing, oliguria and then anuria with nitrogen retention are caused by the precipitation of haematin in the renal tubules. The rational treatment in such event would be the administration of alkalis with the object of keeping the haematin in solution (Baker and Dodds).

The First Splenectomy for this Disease

In conclusion, I must refer once more to the first splenectomy performed for this disease by Spencer Wells in 1887, because it bears witness to the courage of the operator, and shows how defects in the technique of asepsis can be in a measure compensated for by manipulative skill. As will be recalled, his finding of an enlarged spleen was a surprise at the operation. The abdominal tumour was thought to be a large fibroid. He had only three times previously removed spleens, all for rupture, and with fatal results, yet he went ahead and succeeded. He cured the patient, without knowing why. His patient is still alive, and her only son was one of my early cases. There is now a third generation, and my clinical curiosity seeks to discover if the child has either splenomegaly or increased fragility. So far the mother has said me nay.

[3745]

* Read in opening a discussion in the Section of Surgery at the Centenary Meeting of the British Medical Association, London, 1932.

Splenectomy in Purpura Haemorrhagica

In purpura haemorrhagica the results of splenectomy are no less spectacular, but diagnosis needs to be careful. The disease is characterized by bleeding, a delayed retractility of the clot, and—unlike haemophilia—by a normal coagulation time and, most important, reduction in the number of platelets. The capillary resistant test is positive. The anaemia, which only follows the haemorrhage, is of the secondary type, and shows normal regeneration. In this disorder splenomegaly is the exception. Following splenectomy the platelets rise within twenty-four hours and are often normal within three days. The best series of cases, so far as I know, comes from the Mayo Clinic—forty-one cases, of which thirty-six patients are now well and two are dead, a high mortality when one recalls how skilful surgery is at Rochester.[3] The first successful splenectomy for this disease was advised by Kaznelson in 1916.[4] This brings me to the fact that blood transfusion results in a transient rise in platelets and a diminution in bleeding, which makes it the best treatment for the acute phase of the disease and as a preparation for splenectomy. It must be remembered, however, that this purpura has a tendency to spontaneous remissions and even to complete recovery. When face to face with a case not previously seen, diagnosis can present difficulty. The occasional severe purpura associated with infective endocarditis should not elude us; but the haemorrhagic purpura which can occur with aplastic anaemia, and with a low platelet count and a leucopenia, might easily lead to error in diagnosis and a certainly fatal splenectomy. The profound and antecedent anaemia of the aplastic condition should give the key.

Bedson's Work on Platelets

Since the experimental work of Bedson, evidence has accumulated to show that although the platelets are abnormally low in purpura they alone are not the cause; there must be in addition *damage* to the capillary wall. The complete removal of platelets from the circulation does not induce purpura.[5] Bedson's anti-platelet serum produced purpura by (1) diminishing the platelet content, and (2) damaging the endothelial capillary wall.

It is believed now that the spleen destroys platelets; this fits in with the increase in platelets in animals after the spleen is removed. In the guinea-pig the rise is manifest in forty-eight hours, reaches the maximum in ten to fourteen days, and falls to normal in three to four weeks. Bedson also showed that an animal can be protected from purpura—experimentally produced by his serum—by splenectomy. Although Bedson concluded from experiments that splenectomy would only be followed by a transient increase in platelets, and despite the fact that, clinically, the platelets fall again in three to four weeks, the results of the operation are excellent. For this there is no explanation.

Variations in the Platelet Count

Evidence has accumulated to show that the platelets are formed in the marrow from the megakaryocytes. From 250,000 to 450,000 is the range in health.[6] A single loss of blood results in increase in platelets: this may be due to regeneration of the marrow. Earlam, Hueck, and others showed that there is a rise in platelets after any surgical operation. Further, childbirth—and especially Caesarean section—is followed by a rise which is at its maximum by the tenth day.[7] As Evans says, "the time relations of clinical thrombosis and embolism are very similar to those of the platelet reactions."[8] This gives one to think. The anxieties of post-operative thrombosis and embolism are ever with us. Further study of the platelet counts following operations, especially those in the pelvis, would surely be worth while; and in this connexion let me recall Cramer and Drew's[9] observations that animals reared in the dark show a low platelet count, and that platelets rise after exposure to the mercury lamp.

Splenectomy in Splenic Anaemia

In splenic anaemia removal of the spleen presents no such good results. Of 167 cases subjected to splenectomy for this disease at the Mayo Clinic, eighty patients are reported alive and sixty-eight as dead. Is not the reason that the cause of splenic anaemia, whatever it may be, has a two-fold effect—on the one hand anaemia, and on the other hand congested spleen and cirrhosis of the liver? Splenectomy benefits the anaemia, but has small effect on the cirrhosis, and there is good reason to believe that the latter progresses to a considerable degree before it is clinically recognizable. In over 50 per cent. of the cases proved at post-mortem examination to be nodular fibrosis of the liver, splenomegaly has been the earliest sign to appear in life.

The splenomegaly in this disease is associated with venous congestion, which is manifest after death sometimes by enlarged veins on the surface of the spleen, and always by the characteristic macroscopical and microscopical appearances. Moreover, in life the size of the spleen often diminishes after a severe haematemesis, and the veins at the end of the oesophagus have been reported engorged—as evidenced by *x*-ray examination. The congestion of the spleen would appear to be associated either with cirrhosis of the liver or, in a minority of cases, with thrombosis of the portal and splenic veins. Examination of the records of the Bernhard Baron Institute at the London Hospital shows that thrombosis of the portal and splenic veins is not necessarily associated with splenomegaly, which only occurred in 30 out of a total of 105 cases of thrombosis of the portal and splenic veins. And of these 30 cases only 18 were associated with the clinical picture of splenic anaemia. It cannot be said, therefore, that thrombosis of the portal and splenic veins is a frequent associate of splenic anaemia. Most of the patients die either from the later manifestations of cirrhotic liver or from haemorrhage. Of the sixty-eight patients who died following splenectomy in the Mayo Clinic, in no less than one-third was death due to haemorrhage. Even when cirrhosis of the liver is clinically recognizable in splenic anaemia the blood picture is one of secondary anaemia, in contrast to the picture presented by cases of nodular cirrhosis of the liver, in which the picture is of the polycythaemic type.

On the whole, I suggest splenectomy is worth while performing, provided clinical evidence of advanced hepatic cirrhosis is absent. Some results are excellent. I met one of my early patients a short time ago; she had had a large spleen removed in her twenties; she is now well, and is the mother of three children. The investigation of the blood prior to splenectomy should include a platelet count, for in a few cases the platelet count is too high for the operation to be safe, as shown by Rosenthal.[10]

References

[1] Albrecht: Quoted by Ed. Beer, *Trans. Amer. Assoc. Surg.*, 1928, xlvi.
[2] Dawson, Lord: Haemolytic Jaundice, Hume Lectures I and II, *British Medical Journal*, May 30th and June 6th, 1931.
[3] Pemberton, John: Results of Splenectomy, *Collected Papers of the Mayo Clinic*, 1931, xxiii, 640.
[4] Kaznelson, P.: *Wien. klin. Woch.*, 1916, xxix, 1451.
[5] Bedson, S. P.: *Journ. Path. and Bact.*, January, 1922, p. 94; *Lancet*, 1924, ii, 1117.
[6] Mackay, W.: *Quart. Journ. Med.*, April, 1931, p. 285.
[7] Evans, W. Howell: *Proc. Roy. Soc. Med.*, 1929, xxii, 11.
[8] Idem: *Journ. Path. and Bact.*, 1928, xxxi, 815; ibid., 1928, xxxi, 833.
[9] Cramer, W., Drew, A. H., and Mottram, J. C.: *Brit. Journ. Exper. Path.*, 1923, iv, 37.
[10] Rosenthal, N.: *Journ. Amer. Med. Assoc.*, 1925, lxxxiv, 1887.

REMOVAL OF THE SPLEEN*

BY

THE RIGHT HON. LORD MOYNIHAN OF LEEDS
K.C.M.G., C.B., M.S., F.R.C.S.

Removal of the spleen, if records are to be trusted, was practised in at least a few instances before the birth of Christ. It was known to the ancients, and their knowledge has been confirmed in all later times that the spleen is not essential to life. Aristotle wrote:

"It is the position of the liver on the right side of the body that is the main cause for the formation of the spleen, the existence of which thus becomes to a certain extent a matter of necessity in all animals, though not of very stringent necessity."

Erasistratus took the view that the spleen was wholly devoid of use; Galen spoke of it as an organ "full of mystery." In an old English translation by Holland of the "Natural History" of C. Pliny (A.D. 23 to 79) the following statement is found:

"This member hath a proprietie by itself sometimes, to hinder a man's running: whereupon professed runners in the race that be troubled with the splene have a devise to burne and waste it with a hot yron. And no marveile: for why? They say that the splene may be taken out of the body by way of incision, and yet the creature live nevertheless: but if it be man or woman that is thus cut for the splene, he or she looseth their laughter by the means. For sure it is that intemperate laughers have always great splenes."

Shakespeare speaks of both these functions of the spleen in *Measure for Measure*:

". . . such fantastic tricks . . .
As make the angels weep; who, with our spleens,
Would all themselves laugh mortal."

And again Maria in *Twelfth Night*, as she ridicules Malvolio before Sir Toby, says:

"If you desire the spleen, and will laugh yourself into stitches, follow me."

Of its effect upon the pace of a runner the Bastard speaks in *King John*:

"I am scalded with my violent emotion
And spleen of speed to see your Majesty."

In ancient literature the statement is made more than once that the giraffe, noted for a turn of high speed, is spleenless—an interesting example, of which evidences are still to be discovered in the literature of to-day, that statements lacking in truth, capable of verification or refutation, but never so tested, are slavishly copied by one author from another. In the Middle Ages, as Brogsitter has told us, belief in the inhibitory effect of the spleen upon the pace of runners is found in Murer's *Belagerung von Babylon*:

"Ich han mir lon dass milx Schnyden
Dass ich mag laufen wegt und veer."

A full account of the removal of the spleen from a woman is recorded in 1549 by Fioravanti in *The Treasure of Human Life* (a full translation of this record will be found in my book on *The Surgery of the Spleen*, pp. 5, 6, 7); and other cases of splenectomy occurred in the seventeenth century. The first experiments upon the spleen were carried out in 1669 by Malpighi, who ligatured the splenic artery and vein in a dog. A subsequent operation showed that the spleen had undergone almost complete atrophy, and that the liver had enlarged. Malpighi's name is, of course, for ever associated with the lymphoid follicles of the spleen. In 1676 Clarke performed the first experimental splenectomy in a dog; the animal recovered, and the only subsequent change noticed was that it became much fatter. Morgagni describes a successful case of splenectomy in a dog, performed by Zambeccari at Florence in 1680. It is evident that he performed this operation himself quite frequently after this date, for he observes that, after studying the matter for five years, he found that dogs underwent no special change in consequence of such an operation; they did not grow fatter, had no loss of fertility, and no change in their manners or disposition was noticed.

In the nineteenth century experimental observations increased rapidly in number. In 1828 Schultz records that he had removed the spleen from twenty-four animals, twenty-three of which survived the operation; the fertility of the animals was reduced, there was a greater inclination and ability to run far, and a diminished secretion of bile. Czermak also observed the lessened fertility of animals, and remarked upon the enlargement of the lymph glands in the mesentery. In 1841 A. Bardeleben published the results of his experiments, which were directed towards the discovery of the functions of the spleen. They were the first well-considered and fully recorded operations to be performed, and they have become classical. For the first time they showed with complete proof that animals could live and thrive after the removal of the spleen, and that certain changes, possibly compensatory in character, followed upon the loss of this organ. The changes noted were in the blood and the lymphatic glands. Vulpius, who followed in 1894, summarized his observations as follows:

1. Extirpation of the spleen produced a transitory decrease in the number of red, and an increase in the number of white, blood corpuscles.

2. The thyroid gland cannot vicariously assume the function of the spleen.

3. The lymphatic glands and the bone marrow show an increased blood-forming activity after removal of the spleen.

4. The regeneration of the blood, after the loss of blood, is probably less rapid in individuals in whom splenectomy has been performed.

A great many observers confirmed these observations subsequently.

That the spleen is not essential to life is also shown by the fact that it is occasionally absent. Aristotle wrote:

"The spleen is not invariably present; and in those animals that have it, it is only present of necessity in the same sense as the excretions of the belly and of the bladder are necessary, that is, of being an inevitable concomitant."

Rokitansky and Ziegler in the middle of the nineteenth century asserted that the spleen was not always present, but neither gave any specific instance of its absence. At the close of the century Hodenpyl found records of nine cases of alleged absence of this organ, and related a tenth case observed by himself. Two of the cases occurred in infants 6 weeks and 1 hour old respectively; the remaining eight were in adults, the oldest being a woman, aged 57, who had no unusual symptoms during her lifetime. The records of at least three of these are indisputable. Indubitable cases of congenital absence of the spleen are related by Sternberg, Kohllass, and Riches.

By the middle of the last century, therefore, it was clearly established, by experience which was beyond cavil, that the spleen was an organ not necessarily present in normal individuals, that its removal, when successful, did not seriously impair the chances of life and of good health, and that after its removal certain changes, assumed to be of a compensatory character, followed in due course. The way was then prepared for the question of the deliberate removal of the spleen from man in conditions in which it was enlarged by disease. The first instance of such an operation is related in 1826 by Quittenbaum of Rostock (the father of ovariotomy in Germany), who, after a series of experiments in which the spleen was successfully removed from cats and dogs, under-

* Read in opening a discussion in the Section of Surgery at the Centenary Meeting of the British Medical Association, London, 1932.

took the removal of the organ from a human being. The patient, it is interesting to note in connexion with recent developments of the surgery of the organ, was a woman suffering from cirrhosis of the liver and ascites. It was "the patient's urgent entreaty rather than the surgeon's judgement" which led to the operation being performed in a woman so ill; she survived the operation only six hours.

In the years 1855 and 1856 fierce controversy raged in Germany between two surgeons of Darmstadt, Simon and Küchler, as to whether the operation of splenectomy could be justified. It fell to Spencer Wells to perform the first splenectomy in modern days in this country in 1865; the patient died of peritonitis 158 hours after the operation. By this time the position of Spencer Wells in the surgical world was such that his authority was an absolute warrant for the performance of any abdominal operation. His sagacity, integrity, prudence combined with intrepidity, and technical skill were such as to command the respect of all men. It was accordingly not very long before other operations involving the removal of the enlarged spleen were attempted. T. Bryant of Guy's Hospital performed the operation twice, in 1866 and in 1867, in cases of leucocythaemia. Both patients died from haemorrhage—one fifteen minutes, the other one and a half hours, after the operation. Koeberle of Strasbourg performed a similar operation for a like condition in 1867; the patient died "soon after," of haemorrhage. Spencer Wells in 1873, and again in 1876, removed the spleen for this disease, and both patients died, one of peritonitis and one of haemorrhage.

From this date up to the last few years the operation was reserved for cases of injury, for spleens with a rotation of the pedicle, for cysts of the spleen, or for cases of enlargement of the organ due to causes which were not always discoverable. In 1898 Vanverts, in a Paris thesis, collected the records of 274 cases of splenectomy, with 170 recoveries. In the last few years splenectomy has been performed in certain of the anaemias associated with splenomegaly. The technique of the operation has been greatly improved, and the mortality in all classes of cases very considerably reduced.

Functions of the Spleen

The functions of the spleen are not fully understood. Its activities may be grouped in relation to four separate systems.

The Haemopoietic System.—In embryonic life red cells and leucocytes are manufactured here—a return to this function is seen in the leukaemias and in infections in adult life. The Malpighian bodies give rise to leucocytes, and the endothelial cells of the splenic pulp may, under certain circumstances, proliferate and be thrown off into the circulation. It has been suggested that the spleen secretes a hormone which acts on the bone marrow; a rapid anaemia occurs after splenectomy, and it is possible that this is due to the absence of such a hormone. An intraperitoneal injection of splenic extract in such a case has been shown to cause an increase in the red cells and in haemoglobin. A substance which restrains the production of white cells has been supposed to be present, and its absence after splenectomy held to be the cause of the leucocytosis which constantly occurs.

The Reticulo-endothelial System.—The spleen is the most important single member of this system. The pulp cells are capable of taking up foreign particles circulating in the blood stream, effete red cells, and perhaps also blood platelets and circulating organisms. Broken-down red cells are carried, probably in endothelial cells, to the Kupffer cells of the liver. Organisms such as the malaria parasite and *Spirochaeta pallida* extracted from the blood may be stored in the spleen. The pulp cells have a further function in combating infections by the manufacture of immunizing substances, and it is for this reason that the spleen is constantly enlarged during the course of generalized infections; a lowered resistance to infections is one of the (theoretical) after-results.

The Digestive System.—The volume of the spleen varies during the day, an increase occurring during the three or four hours after a meal. It may be that there is some connexion between the variation in the size of the spleen and the leucocytosis which occurs during digestion.

The Sympathetic-endocrine System.—The sympathetic nervous connexions of the spleen are very intimate, and it has been shown that the injection of splenic extracts causes a contraction in smooth muscle. A connexion has been suggested between the spleen, the thyroid, and the thymus glands.

Indications for Removal of the Spleen

Rupture or Laceration of the Spleen.—Rupture of the normal spleen without injury has been recorded. This is a very uncommon type of lesion, and no explanation of it has been put forward. A series of thirteen cases has been collected, nine of which recovered after operation. Cases due to injury are far more common. There are cases where massive bleeding takes place immediately after the accident; the patient does not recover from the original shock, and death takes place in a very short time. Such cases are due to a tearing of the splenic vessels at the hilum of the organ, or to its actual avulsion. After laceration of the spleen the patient recovers from the initial shock of the injury, and signs due to internal haemorrhage then make their speedy appearance. In a few cases the initial loss of blood is small, and symptoms of haemorrhage are not observed until a second effusion of blood occurs. Operation must be undertaken as soon as the diagnosis is made, and the spleen should be removed. Splenectomy gives good results, a recent series showing a recovery rate of 93 per cent.

Movable Spleen.—This condition is met with either as part of a general visceroptosis or when the phrenocolic ligament is unduly long. Attacks of severe and sudden pain may be experienced. A case is recorded where a movable spleen lying in the pelvis became twisted: the swelling which resulted caused impaction and intestinal obstruction owing to pressure on the rectum. In most cases relief can be obtained from a well-fitting belt, but in others an operation may have to be performed. As a rule fixation, though possible, is not so satisfactory as removal, which has little or no mortality and is followed by no appreciable disability.

Torsion.—Torsion may occur in a freely movable spleen. The blood supply is cut off, the organ threatens to become gangrenous, and a general peritonitis may result. Relief of the strangulation, and fixation of the spleen have been advocated, but removal of the spleen will probably be necessary in most cases.

Prolapse of the Spleen.—Some of the earliest cases in the literature refer to removal of the spleen for prolapse, and the operation appears to have been followed by recovery in most cases. This must be a rare accident even in war injuries, and splenectomy would only be called for in those cases in which the spleen was badly lacerated or infected. In other cases the spleen would be preserved.

Malaria.—Enlargement of the spleen may be a danger or a discomfort to its owner on account of liability to rupture from trivial injuries. The spleen is the breeding ground of the parasites; its removal may make the disease more amenable to treatment, and so help to cure it. The spleen may be mobile or firmly fixed;

if the former, removal is simple and safe ; if the latter, it is difficult and dangerous. The mortality is approximately 5 per cent. in the former and 75 per cent. in the latter condition.

Splenic Anaemia.—It is time for the title " Banti's disease " to be dropped. In Banti's own description I can hardly recognize conditions with which experience in this country has made me familiar. Splenic anaemia is a condition in which the spleen is enlarged, anaemia develops, haemorrhages are common, the liver undergoes changes resulting at last in atrophy of considerable degree, and ascites is present. It is a continuously progressive disease, and in the absence of surgical relief is invariably fatal. Operation is the one opportunity of saving life. Its danger is directly dependent upon the stage which the disease has reached. In earlier stages the spleen is not greatly increased in size, anaemia is slight, and when the abdomen is opened the spleen is found to have few adhesions, none of them of great density. In later stages anaemia may be profound, the spleen gigantic, and adhesions of such character that their division seems at first almost impossible. In one case I had to remove a piece of the diaphragm, as a condition of cohesion rather than adhesion was present ; a gap about two inches long was left in the diaphragm, but closure presented only slight difficulty, and the patient recovered.

There are few, if indeed there are any, operations in surgery which require such careful preparation of the patient. If the spleen is gigantic its size must be reduced by deep *x*-ray treatment, or preferably by the application of radium. In a few weeks a spleen which seems to fill the abdomen, and to show great salience, is reduced so much that only a slight projection is felt below the left costal margin. Anaemia, which may be profound, is always present, and is especially severe after any form of haemorrhage ; I have had many patients whose red cells did not number two million to the c.mm. Anaemia responds readily and rapidly to transfusion of blood, which may be repeated several times ; on two occasions I have given blood five times before removing the spleen. When the general and local conditions are thus improved the difficulties of the operation are not, of course, reduced, but its dangers are much lessened. My mortality is between 6 and 7 per cent., and I attribute this to the care of the patient before operation. There is no hurry as a rule, and a couple of months may well be spent in making the patient safe for surgery.

The immediate mortality of splenectomy in this condition varies according to the stage of the disease and the competence of the operator ; the technical difficulties are never, or rarely, overcome without great patience and resource. Bleeding from adhesions must be stopped by pressure with hot large swabs packed into the wound as tightly as possible. The average death rate in skilled hands is approximately 12 per cent. But in the late cases operation does not entirely free the patient from risks. Three of my patients have suffered from haematemesis some months or years afterwards, and on two occasions had to be admitted to hospital for transfusion ; one of these patients has suffered from haematemesis on three occasions. This very disappointing experience makes it clear that operation must be practised at the earliest possible moment. Even in late stages, however, the recovery of the patient is often most remarkable. When the liver is found to be shrunken and hard, when ascites is present, and the outlook apparently almost hopeless, improvement begins and is steadily maintained, and the patient finally appears to recover completely. There is no doubt that regeneration of liver cells in such cases must be considerable. On one occasion only have I had to tap the abdomen to remove fluid after splenectomy.

Haemolytic Jaundice.—Of the two types of this disease, the congenital and the acquired, the former is the less dangerous. Patients are aptly described by Chauffard as being " more jaundiced than ill." In the acquired form the chief danger to life attaches to the conditions secondarily produced in the biliary system. Widal describes grave acute attacks which he calls " crises of deglobulization," and which he believed to be due to massive haemolytic activity, resulting in a rapid and severe destruction of red cells. I have seen these cells fall from 4½ million to 1½ million in the course of a week. In such crises there are great malaise, a high temperature, increase in size and tenderness of the spleen, deepening of jaundice, acute anaemia, sometimes temporary haemoglobinuria, and urobilin is found in the urine ; there are no petechiae, and the skin does not itch. A large number of cases of advanced acquired haemolytic jaundice develop cholelithiasis, and black soft stones may fill the common duct ; the characteristic signs and symptoms of common duct obstruction may occur, and I have no doubt that some of the so-called " crises " are in reality nothing more than attacks of common duct obstruction. For this condition of haemolytic jaundice removal of the spleen acts like a charm. The operation is very safe and very easy ; jaundice disappears within ten days. There are two difficulties, however. If a patient has long borne an enlarged spleen, and develops common duct calculous obstruction with secondary infection of the liver, the problem is serious. Is the spleen to be first removed, or is the common duct to be cleared? The only case of this disease that I have lost was one in which I emptied the common duct of many stones and soft mud and pus. This condition should, of course, have never had the chance to develop, for removal of the spleen ten years before would have prevented the formation of stones and have cured the condition of haemolytic jaundice. If an accessory spleen is present it must be removed. In two cases—one of them my own—symptoms recurred to a slight degree after splenectomy when small accessory spleens had been seen at the operation.

Purpura.—In 1887 attention was called to the low thrombocyte count in this condition. In 1916 Kaznelson noticed cases in which the spleen was enlarged, and, thinking the diminution in the platelets might be due to a destructive action by the spleen, he suggested that it might be removed. It had already been shown that a removal of the spleen was followed by an increase in the thrombocyte count, and the operation seemed worthy of trial. There are two types of the disease, acute and chronic. In the acute it appears doubtful if any therapeutic measure will be successful. In the chronic type, however, splenectomy seems to " cure " the condition. It is not definitely known why the thrombocytopenia occurs. It may be that there is some abnormality of the bone marrow leading to a diminished production of these cells, that when they are formed they are destroyed by some toxin in the circulating blood, or that they are destroyed by abnormal activity on the part of the spleen. It has been suggested that in the presence of a normal thrombocyte count splenectomy, by diminishing destruction and therefore causing an increase in the blood, is liable to be followed by thrombosis in the peripheral vessels. This consideration is probably only theoretical, as the danger is no greater than after splenectomy for any other cause. I have removed the spleen in one case for this condition where the thrombocyte count was normal without any accident of this sort occurring, but with no benefit to the patient. It would seem that the thrombocyte count is of more use as an estimate of the value of the operation than as a possible indication of post-operative troubles. A series of four splenectomies for purpura was

attended by no mortality, and by complete restoration of health in every case; the only acute case died shortly after operation, although transfusion was repeatedly used before and afterwards.

Syphilis.—Gummata of the spleen are sometimes seen, and the diagnosis is not always made before operation. They may be associated with a negative Wassermann reaction, and they may not react to anti-syphilitic treatment. Splenectomy has been performed for this condition on several occasions. W. J. Mayo has pointed out that some cases of syphilis resist all drug treatment, and that the spleen is the site where the spirochaetes lodge and defy treatment; he showed that splenectomy would permit a rapid cure by medical means.

Cysts, Tumours, etc.—Removal of the spleen for such conditions as cysts, tumours, and splenomegaly without symptoms follows general surgical principles, and need not be discussed.

In general, it may be observed that success in this operation depends upon two factors: a careful preparation of the patient by the usual methods, especially by blood transfusion, and a reduction of the size of the spleen by application of x rays or radium; the surgical outlook may so be considerably improved. Except in cases of splenic anaemia, the technical difficulties of the operation are inconsiderable.

PNEUMOCOCCAL AND STREPTOCOCCAL PERITONITIS*

BY

L. E. BARRINGTON-WARD, M.B., Ch.M., F.R.C.S.

SURGEON, HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET

Pneumococcal and streptococcal peritonitis should be a fruitful subject of discussion, for a review of the world's literature of the past five years shows much divergence of opinion, and I think it is probable that in this gathering there will be found no greater unanimity. These diseases are rather rare, and it falls to the lot of no one to have great experience in them.

London seems to be fortunate in its comparative immunity, if one may judge of the lack of any long series of published cases and from one's own hospital experience. In the past fifteen years at the Hospital for Sick Children, Great Ormond Street, there have only been twenty cases of pneumococcal peritonitis and twenty-two cases of streptococcal peritonitis. From a ten-year record at the Children's Hospital, Toronto, Duncan has reported thirty-four pneumococcal and thirty-two streptococcal cases. Obadalek has observed in his clinic at Brünn, in ten years, fifty cases of pneumococcal peritonitis. The French, judging from recent literature, are greatly interested in this condition, although no long series of cases have been reported. It would appear that the disease is becoming more frequent in France. It is reasonable to assume that there is a variation in incidence in different nations, and indeed different localities. There are certain facts upon which all are agreed: pneumococcal peritonitis is chiefly a disease of childhood, and is more common in the female sex: in its acute diffuse form it is a very fatal disease, whatever the treatment. There are three questions of great interest:

1. How does pneumococcal peritonitis arise?
2. How may it be diagnosed?
3. How shall it be treated?

* Read in opening a discussion in the Section of Diseases of Children at the Centenary Meeting of the British Medical Association, London, 1932.

Mode of Infection

There are four possible ways by which the pneumococcus can reach the peritoneum: (1) By the genital tract in females. (2) By the blood stream. (3) By the intestine. (4) By the lymphatics through the diaphragm.

There is little evidence that a transdiaphragmatic spread is more than a possibility. I believe that the genital passage is the most common source of infection, for in no other way can the vast preponderance of female cases be explained. Moreover, no one has thrown any doubt on the careful work of McCartney and Fraser. It cannot be the only path, for the disease occurs in boys—of my cases, six out of twenty were males—and even in female cases the genital passages may be free of pneumococcal infection. I am informed by Dr. Nabarro that the pneumococcus is not often found in the vaginal discharges of London children: this may explain the small number of cases and the reduced proportion of females to males in comparison with the figures of other localities.

It is difficult to estimate the frequency of a blood infection, because the pneumococcus, when virulent, tends to establish an early septicaemia. If one considers the constant presence of the pneumococcus in the respiratory passages, and the frequency with which primary pneumococcal infections of the ears, pharynx, or pleura may be followed by septicaemia and secondary peritonitis and pericarditis, it is reasonable to suppose that sometimes the pneumococcus may be carried in the blood stream to the peritoneum, where it finds a non-resistant medium. It is not too fanciful to compare it to the behaviour of the staphylococcus. This organism may gain access to the blood stream of a child from some abrasion or sore, and it selects a bone for its attack and development. The clinical features and pathological findings in certain cases of pneumococcal peritonitis lend some support to the theory of a blood-stream infection. In the female case with a definite genital focus, the signs are first lower abdominal, and the pathological changes reach their fullest development in the pelvis. But in the boy, where this route can be excluded, the signs are more general, sometimes more marked in the upper abdomen, and the pathological changes are equally spread throughout, save for the influence of gravity on the inflammatory effusion. A blood-borne infection seems to be a likely explanation of this generalized distribution. The intestinal route has several supporters, but, I believe, without much reason. At first sight it is the most attractive, for the intestines bear the same relation to the peritoneum as the lungs to the pleura, and the migration of an organism through the intestinal walls is as easy to understand as an empyema in pneumonia. In its favour an instance has been reported of pneumococcal peritonitis following perforation of the stomach, and a case of intestinal resection at the Hospital for Sick Children was followed by a pure pneumococcal peritonitis. Bréchot quotes De Quervain, who operated on an encysted pneumococcal peritonitis in a girl of 10, and five months later removed her appendix and found that it contained pneumococci and colon bacilli. Others have drawn attention to an intensification of the infection in the ileo-caecal region.

No doubt the frequent occurrence of diarrhoea in the early stages of the illness has played some part in suggesting an intestinal source. Against it is the fact that the pneumococcus is an inconstant inhabitant of the bowel, and if it were an inhabitant, there is no reason why it alone of organisms should migrate through the walls. The intestinal wall is impervious to organisms save through trauma or ulceration. The diffuse nature of the peritonitis is also against a local infection. I cannot believe that an intestinal lesion plays an important part in this disorder.

Diagnosis

The clinical features of pneumococcal peritonitis are on the whole very characteristic. The illness may begin with overwhelming suddenness, but more usually there are two or three days of unexplained and indefinite malaise before the child is brought under medical supervision. There may have been some catarrhal signs: vomiting and diarrhoea and abdominal pain are early symptoms. The pain is general, of moderate severity, and not of a colicky type. The temperature is often high, higher than that associated with appendicitis. The pulse and respirations are raised. The abdomen soon becomes distended, and this distension is rather central. There is general abdominal resistance, but a much less degree of wooden rigidity than is found in peritonitis due to appendicitis. The abdomen has a doughy feel, and is everywhere tender. The child looks ill, flushed, and anxious, and there is often some cyanosis. It is said that herpes is frequent, but I have not seen this. Often the quick respirations and the general appearances suggest an early pneumonia, but examination of the chest is negative, or only shows those signs associated with a severe septicaemia.

All degrees may be found. In milder cases the abdominal symptoms and signs may be so indefinite that no diagnosis is made until two or three weeks later, when a localized collection of pus is found in the abdomen, which reveals on incision and examination pneumococcal pus.

It is sometimes possible in female cases to recognize the local origin. If seen sufficiently early, it may be possible to deduce from the symptoms and signs that the infection is primarily pelvic, spreading upwards to the whole abdomen. Tenderness and rigidity are at their maximum above the pubis, but with the ascent of the infection the signs become more diffuse.

There is a leucocytosis of between 15,000 and 40,000, and polymorphs predominate. Gibson considers the blood count to be characteristic, but other observers do not agree that it can be relied upon to differentiate a pneumococcal from a septic peritonitis. Ellison, Tidy, and Williams diagnosed a case as pneumococcal peritonitis by an agglutination test. The diagnosis from streptococcal peritonitis is exceedingly difficult and may be impossible. In my experience, streptococcal peritonitis is always more virulent in its attack and development. The appearance of the child is even more toxic, but cyanosis is absent. Diarrhoea is often present and the abdominal signs are very similar. There is the same tumescence with a doughy rigidity and general tenderness.

This differential diagnosis is of minor importance, for the same principles of treatment will apply to either of these forms of primary peritonitis. It is a very different matter when we come to consider the distinguishing features of pneumococcal or streptococcal peritonitis from the peritonitis due to acute appendicitis. It is of the utmost importance that this differentiation should be made. In advanced cases it may be impossible on physical signs alone, but in the average case I believe that a critical examination of the history and appearance of the patient enables a correct diagnosis to be made. In appendicitis in children the pain at onset is always central, even when the appendix is concealed behind the caecum or within the pelvis. Careful inquiry will usually elicit this fact. At a later stage, when the peritoneum is affected, there is always a hard rigidity, even when the abdomen has begun to be distended. Again, careful examination will show a maximum point of tenderness in the right iliac fossa wherever the appendix is situated.

I have very recently had a unique opportunity of testing the value of physical signs. Two cases were admitted on my operating day, within one hour. Both were boys. The younger, aged 2½, had been ill for three days with abdominal pain and vomiting. His mother stated that the pain was at first above the umbilicus. He had had some diarrhoea. His temperature was 99.6°, pulse 132, and respirations 56. His breathing was a little laboured. The abdomen was distended. There was a general board-like rigidity and general tenderness. The tenderness was a little more definite over McBurney's point. The diagnosis was made of peritonitis, secondary to appendicitis, and at the operation a gangrenous perforated retrocaecal appendix was found with general peritonitis. The appendix was removed and the peritoneal cavity was drained and recovery followed.

The second patient, a boy aged 6½, had been quite well until six days before. He then complained of malaise, developed a temperature of 101°, and had several frequent and slimy stools. The following day an enlarged gland of the neck was noted, and he had a severe epistaxis. Three days before admission he began vomiting and the respiration became rapid. He complained of pain in the epigastrium, and his general condition deteriorated. On admission he looked ill. His pulse was 136, temperature 100.8°, and respiration 80. There were no signs in the chest sufficient to account for his condition. The abdomen was distended, very tender in every area, especially in the epigastrium, with general resistance not amounting to a hard rigidity. The diagnosis was made of streptococcal peritonitis, and under gas and oxygen a small incision was made to verify the diagnosis, and a tube was placed in the pelvis. Anti-streptococcal serum was given intravenously, and all measures taken to combat the infection, but the patient died the next day. At the necropsy a small amount of purulent fluid was found in both pleural cavities ; there was general peritonitis, but most of the peritoneal fluid had drained away.

These cases were very similar in their appearance, and it was only the slight but definite difference in their physical signs that enabled a correct diagnosis to be made. Operation in the first case undoubtedly saved life ; in the second no treatment, operative or non-operative, would have had effect. With whatever care clinical observations are made there must always remain a few cases in which an element of doubt remains, and it was for these cases that Lipshutz and Lowenburg devised peritoneal puncture. I have no experience of the method, and most recent writers, while commending it, confess that they have not given it a trial. Duncan employed it in twelve cases without accident.

Treatment

It is in the early severe and diffuse form of peritonitis that the problem of treatment is most open to discussion. In the subacute and chronic forms, with localized abscess, the surgical indications are sufficiently clear. It is merely necessary to open and drain the abscess and take measures to improve the resistance of the patient. In the diffuse type, without localization, the problem is that of the septicaemia. During the past few years there has been a strong veering of surgical opinion towards the adoption of a conservative attitude in the early stages. France, Canada, and America lead the way, followed less confidently by Germany, and as for Great Britain, we shall hear to-day.

The opponents of intervention urge that operation is not reasonable, because there is no intestinal leak to be stopped and no diseased organ to be removed, and because drainage cannot be effective in a diffuse peritonitis with matted coils and shut-off collections of pus. They hold with much reason that the performance of a set operation is just sufficient to break down the last resistance of the child and determine a fatal issue. In other septicaemic states, where, for instance, a blood infection has followed a cutaneous lesion or a cellulitis, incision of the primary area before localization is the worst possible treatment.

The matter is difficult to prove by statistics, for the acute types of peritonitis are very fatal whatever the treatment ; and it may be that successful treatment, piloting such cases into a chronic stage with residual abscess, is merely the natural survival of the fittest.

The main argument in favour of immediate operation in all cases is the difficulty of diagnosis. It may not be possible to be certain that the peritonitis is not secondary to appendicitis. Many cases have been reported where an erroneous diagnosis of pneumococcal peritonitis has been made and a diseased appendix found at operation. In the two cases I have already mentioned which were admitted to hospital within an hour, the withholding of operation in the first case would have meant certain death from appendicitis and peritonitis ; in the second case, operation made no difference to the inevitable fatal termination.

My rules of conduct would be these:

If the diagnosis is certain and if the infection as shown by the physical signs is diffuse, then operation is contraindicated.

If the diagnosis is certain and if there is reason to believe that the infection is most intense in one area—for example, the pelvis in girls—then a simple drainage operation is performed. If the diagnosis is uncertain, especially in males, then a quick laparotomy under gas and oxygen, to determine the condition of the appendix and to institute pelvic drainage, is the safer treatment.

The intra-abdominal manipulations should be reduced to a minimum. It is usually possible to realize the nature of the infection at once on opening the peritoneum. The straw-coloured odourless fluid, the bright red roughened peritoneum, the fibrinous patches, some filmy adhesions between the slightly distended coils, form a picture that cannot be mistaken.

In the absence of much exudate it might be justifiable to close the peritoneum, although I have not had the opportunity of testing this procedure.

Whether operation is undertaken or not, immediate steps must be adopted to combat the intense septicaemia. The organism should be rapidly typed in the manner suggested by Armstrong, and the appropriate serum administered. I will leave to others in this discussion, more qualified to speak, the question of the appropriate amount and frequency. Blood transfusion is considered of great value, but I must confess, in my own cases, I have found it a little disappointing. Perhaps one expected too much. Fluids must be administered in large quantities, and glucose solution intravenously is of great value. Mercurochrome and mercury perchloride intravenously have seemed to do good in some cases.

Streptococcal Peritonitis

I must give a separate word to that very fatal condition streptococcal peritonitis. I have alluded to it more than once in discussing pneumococcal peritonitis, and it has many points of resemblance. The clinical features and pathological appearance are very similar, and differ only in degree: 71 per cent. of the cases were in females. Its origin corresponds very closely. I believe the vaginal route of infection is very common, and infection of the peritoneum by the blood stream accounts for all the other cases. Its septicaemic complications are very severe. In my experience, recovery with or without subacute encysted intraperitoneal collections never occurs. Operation has no effect. In fifteen years there have been twenty-two cases at Great Ormond Street: twelve were operated upon, ten were not, but all terminated fatally.

One can only hope that, with the passage of time, the streptococcus will become less virulent, or the human immunity greater, and that the disease will become more benign. Hopefully one may recall the vast reduction in the number of cases of fulminating osteomyelitis due to the staphylococcus which have occurred in our own memory. In the severe streptococcal peritonitis, operation is not demanded, save for the exclusion of an appendix peritonitis. Serum, blood transfusion, and the administration of large quantities of fluids will be the better line of treatment.

THE EFFECTS OF ANAESTHETICS ON THE LIVER*

BY

WESLEY BOURNE, M.D., C.M., M.Sc., F.R.C.P.(C.)

MONTREAL, CANADA

Attention was first directed to "chronic chloroform poisoning"[1] shortly after the discovery of anaesthetics. Since that time interest in the action of this drug on the liver has been more or less constant. Stiles and M'Donald[2] have reviewed the earlier literature and given their findings, and Whipple and Sperry[3] have contributed most invaluable data ; yet I shall not recount extensively the inceptive investigations, but rather the more recent ones concerning the effects of several chemical substances which are used in anaesthesia.

Latterly, considerable information has emanated from the Mayo Foundation on the physiology of the liver ([4] [5] [6] [7] *et al*), and the value of functional tests of this organ.[4] [8] What with partial and total removal of the liver, heart-lung-liver and heart-lung-leg perfusions, denervation, studies on detoxication, and so forth, our knowledge of the several known vital functions of this great organ has been made much more clear and a rational evaluation given to the many tests, of which it may be said with authority that Rosenthal's[9] is the most dependable in a relative and comparative sense.

It has been shown[10] that brief periods of chloroform anaesthesia are sufficient to produce immediate and delayed toxic effects on the liver in the dog ; that half an hour of chloroform causes injury which requires eight days for functional recovery, while it takes as long as six weeks for return to normal after two hours of chloroform anaesthesia ; that disturbances of function could be demonstrated with the bromsulphalein test long after pigment metabolism had returned to normal ; that ether produces a definite but transitory impairment of function, recovery being complete usually within twenty-four hours ; and that nitrous oxide and ethylene do not produce any change in this dye test for hepatic function or any disturbance of pigment metabolism, but when there is a reduction in the oxygen supply during the administration of these gases, liver function is so deranged that it takes about six days to come back to normal. At this juncture a word may be said on the topic of cyanosis. Nothing, but harm comes to aerobiotic cells through deprivation of oxygen ; take, for example, the finding of Koehler, Brunquist, and Loevenhart,[11] that anoxaemia produces a more marked acidosis than has been seen in any other condition correlative with depression to all functional activity. This is the point at which one may put it down most axiomatically that any measure of functional perturbation in any one part of an organism is in direct proportion to the damage going on in all of the rest of that being, and, as the liver is such an important structure, it may be looked upon as a good index.

Large doses of morphine cause considerable, but transitory, impairment of function of the liver in dogs,[10] but in the human being,[10] [12] with whom the therapeutic dose is from thirty to fifty times smaller in size, it is believed that no such damage occurs. Amytal, a representative of the malonyl-urea derivatives, has very little action upon liver function, comparing very favourably with ether in this respect.[13] Tribromethanol[14] [15] produces only a mild parenchymatous degeneration of the liver after repeated administration. With this drug, fatty changes in the liver occur occasionally. When they do occur they are very slight in the normal dog.

* Paper read in the Section of Anaesthetics at the Centenary Meeting of the British Medical Association, London, 1932.

Hepatic function is impaired so little that there is good comparison with ether and the barbiturates. Even when a liver has been purposely damaged by chloroform, avertin causes very little additional impediment.

More may be said about the liver in its activity. During anaesthesia phosphoric acid appears to leave the muscles and to sojourn in that gland until the resumption of kidney function after the recovery of an animal, when it is redistributed and partly excreted,[16] and Mann[17] has given it out that ether produces demonstrable effects on hepatic activity ; it causes a hyperglycaemia dependent wholly on the liver, and it also depresses hepatic function in regard to the secretion of bile.

These informative data could easily be amplified: however, they may be sufficient for the present, and this fact remains, that we should not decry any one drug too much. I am convinced that even chloroform has a definite place in anaesthesia.

References

[1] Casper: *Woch. f. d. Ges. Heilkunde*, 1850, xvi.
[2] Stiles, H. J., and M'Donald, S.: *Scottish Med. and Surg. Journ.*, 1904, xv, 97.
[3] Whipple, G. H., and Sperry, J. A.: *Bull. Johns Hopkins Hosp.*, 1909, xx, 278.
[4] Greene, C. H., Snell, A. M., and Walters, W.: *Arch. Int. Med.*, 1925, xxxvi, 248.
[5] Snell, A. M., Greene, C. H., and Rowntree, L. G.: Ibid., 273 ; Greene, C. H., McVicar, C. S., Rowntree, L. G., and Walters, W.: Ibid., 418 and 542.
[6] Mann, F. C., and Boothby, W. M.: *Amer. Journ. Physiol.*, 1928, lxxxvii, No. 2, 486.
[7] Bollman, J. L., and Mann, F. C.: *Ann. Int. Med.*, 1931, v, No. 6, 699.
[8] Mann, F. C., and Bollman, J. L.: *Arch. Path. and Lab. Med.*, 1926, i, 681.
[9] Rosenthal, S. M., and White, E. C.: *Journ. Amer. Med. Assoc.*, 1925, lxxxiv, 1112.
[10] Rosenthal, S. M., and Bourne, Wesley: Ibid., 1928, xc, 377.
[11] Koehler, A. E., Brunquist, E. H., and Loevenhart, A. S.: *Journ. Biol. Chem.*, 1925, lxiv, 313.
[12] Bourne, Wesley: *Journ. Can. Med. Assoc.*, 1927, xvii, 1030.
[13] Bourne, Wesley, Bruger, Maurice, and Dreyer, N. B.: *Surg., Gynecol. and Obstet.*, 1930, li, 356.
[14] Bruger, Maurice, Bourne, Wesley, and Dreyer, N. B.: *Amer. Journ. of Surg.*, 1930, ix, 82.
[15] Bourne, Wesley, and Raginsky, B. B.: Ibid., 1931, xiv, 653.
[16] Stehle, R. L., and Bourne, Wesley: *Journ. Biol. Chem.*, 1924, lx, No. 1, 17.
[17] Mann, F. C.: *Anesthesia and Analgesia*, April, 1925.

A NOTE ON HEPATIC INSUFFICIENCY

WITH SPECIAL REFERENCE TO EFFECTS OF DRUGS USED IN TREATMENT OF ARTHRITIS, GOUT, AND RHEUMATISM

BY

H. A. HARRIS, D.Sc., M.B., B.S.

PROFESSOR OF CLINICAL ANATOMY, UNIVERSITY COLLEGE, AND MEDICAL UNIT, UNIVERSITY COLLEGE HOSPITAL

The urgent attention of the medical profession and of the manufacturers of reputable drugs should be drawn to the series of papers relating to jaundice, cirrhosis, and even acute yellow atrophy of the liver after the assimilation of various drugs of the cinchophen group administered in the treatment of arthritis, gout, and rheumatism. The widespread use of derivatives of cinchophen both in the frank legitimate form and in numerous patent remedies has become a serious danger. Already Weis[1] has recorded ninety-two cases of such poisoning, of which forty terminated fatally.

One is tempted to say that our knowledge of the metabolic processes in an organ is inversely proportional to its size. We now have much accurate scientific information concerning the exact function of the constituent parts of so small a gland as the pituitary, both as regards the pars anterior and the pars posterior. Anatomy, physiology, and pharmacology have kept in step during the dramatic progress of the last quarter of a century. In the case of the suprarenal gland progress has not been so rapid, but from the days of Oliver and Sharpey on the one hand and Addison on the other we have lived to see the spectacle of the victims of Addison's disease returning from the death-bed to routine work as a result of the administration of the suprarenal extract of Pfiffner and Swingle.

In the case of so large an organ as the liver our lack of definite knowledge is astounding. Mann and Bollman[2] state that the known functions of the liver, named in the order in which they appear to be most easily impaired, are: (1) the ability to destroy uric acid ; (2) the excretion of bile pigment ; (3) the ability to prevent reaction from the administration of certain toxic substances. Mann and Bollman have rightly emphasized the dangers of talking of a functional test for the liver when the function of the liver is unknown.

Tests of hepatic function have grouped themselves around the problem of jaundice, sugar tolerance, protein metabolism, hepatic excretion of dyes, and detoxicating action of the liver on certain ingested drugs. The numerous tests depending on the excretion of bile pigment have of late been overshadowed by the van den Bergh reaction. The van den Bergh test is not purely and simply a test of hepatic function. There is more bile pigment made in the spleen and marrow than in the liver. The rate at which bilirubin is formed and the site of maximum formation are variable. The subtle differences in the pigment which determine the recurrence of a direct or indirect van den Bergh reaction are not yet fully understood. In some animals a direct reaction is obtained from the gall-bladder, and only an indirect reaction with the bile obtained from the hepatic ducts. The bile from some animals which do not possess a gall-bladder, such as the rat, never gives a direct van den Bergh reaction. The van den Bergh reaction is as inexplicably fortuitous as the Wassermann reaction—but less reliable.

The liver is concerned with the maintenance of the blood sugar at a particular level in much the same way as the kidney tubule is concerned with maintaining the salt content of the tissue fluids, the parathyroid with the calcium content, or the respiratory centre with the CO_2 content of the blood. There is no test of hepatic sufficiency in relation to carbohydrate metabolism which is reliable. Such tests involve not only the glycogen of the liver but also the glycogen of the muscles and the peculiar factors imposed upon carbohydrate metabolism by the islet tissue of the pancreas and the anterior lobe of the pituitary. Neither blood sugar level, glycogen mobilization, glucose tolerance, nor laevulose tolerance are fundamental tests for hepatic efficiency. When the function of the pancreas is impaired, as in diabetes, the liver actively maintains a higher blood sugar level, so that any further addition of glucose to the blood stream does not furnish evidence of hepatic deficiency. Conversely, after enforced starvation the rate at which injected glucose returns to pre-injection level is greatly retarded, and the degree of retardation is greater in the normal liver than in the diseased liver. The laevulose test is somewhat vitiated by the variation in the time taken by laevulose to replace glucose.

The ammonia and urea of the blood and urine, although closely associated with metabolic processes occurring in the liver in relation to protein metabolism, have failed to give reliable information concerning hepatic function as distinct from renal function. The destruction of uric acid in the normal animal seems to be entirely dependent on the presence of the liver, since no uric acid is destroyed in the absence of the liver. The complete removal of the liver of dogs produces a great increase in the uric acid content of the blood and tissues and causes the appearance of large amounts of uric acid in the urine, yet Mann says that the amount of uric acid in the urine

of persons on high purin diets *might* serve as some index of hepatic deficiency.

From the time of William Hunter of Charing Cross Hospital up to the present, a succession of dyes have been employed as tests of hepatic function. Although rather more sensitive than the simple van den Bergh, recent work with bromsulphalein and the older phenol-tetrachlorphthalein has failed to detect any but gross amounts of damage to the liver. Increase in the quantity of dye injected leads to toxic phenomena due to the dye itself. Such cases have not been unknown in the recent cholecystographic studies. It is unnecessary to discuss the extent to which cholecystography as a fairly reliable test of the function of the gall-bladder has been unwarrantedly confused with the question of function in the liver.

This apparently adverse criticism of the valuable laboratory aids to diagnosis in liver disease is designed to emphasize the importance of clinical signs and symptoms of hepatic disease. Jaundice and the general low level of metabolism ; the flatulence, nausea, and slowness of pulse ; the urine, the stools, the itchiness of the skin, the marked depression, the " jaundiced eye "—these are as reliable as some of the laboratory tests. It is permitted to quote that " laboratory guides are mostly artificial, are reliable in only some instances, and are the handiwork of man ; clinical symptoms are the natural, infallible, unalterable expressions of definite states, and are the ways of God."

The liver occupies a unique anatomical position for registering changes due to material ingested from the alimentary canal. All the blood from the digestive tract must pass through the liver. The extensive capillary bed of the liver is interwoven with the innumerable hepatic cells so that noxious substances entering the portal venous system from the gut may undergo immediate chemical transformation into innocuous substances, or even excretion via the hepatic cell into the bile canaliculi without entering the general circulation. Quite apart from the problems of the liver circulation which have been studied in the normal by Cameron and Mayes,[3] in cirrhosis by McIndoe,[4] and in the isolated perfused liver preparation by Dale,[5] there still remains the implication of the startling statement made by Starling that the liver may hold one-quarter of the total lymph of the body. If we accept the work dealing with the distribution of antibodies in the liver, such as that of Freund and Whitney,[6] there is still no fundamental anatomical or physiological study of the part played by the liver in the formation of lymph.

This brief note on the function of the liver has been prompted by the rapid accumulation of cases of jaundice, cirrhosis, or atrophy of the liver as a result of the administration of drugs of the cinchophen group. Many cases of non-fatal toxicity due to their use are probably unrecognized and unreported. It has yet to be proved that these cinchophen compounds have any beneficial effect other than an analgesic one. The analgesic effect of external application has not been quantitatively compared with that of internal administration. The analgesic effect of drugs of the cinchophen group has not been compared with that of the salicylate group. It might be possible to elucidate the peculiar properties of the benzene ring when in combination with the hydroxyl group in substances ranging from the toxic and analgesic carbolic acid on the one hand through salicylic acid to the toxic and analgesic substances which are peculiarly injurious to the liver.

The following list of cinchophen derivatives, among others published in a recent number of the *Proceedings of the Staff Meetings of the Mayo Clinic*, is reproduced in part so as to indicate to practitioners the particular drugs involved in the production of hepatic disease: Agotan, atochinol (atoquinol), atophan, atophanyl, biloptin (di-iodo-atophan), cinchophen (many brands), hexophan, neocinchophen, novatopan, phenylcinchoninic acid, phenoquam (phenoquin), quinophan, synthaline, tolysin.

The toxicity of chloroform, phosphorus, arsenic, and certain drugs of the salvarsan group is well recognized. The toxicity of the various preparations of cinchophen should be more extensively investigated. All cases presenting any clinical or laboratory signs of hepatic insufficiency should be analysed from the point of view of ingestion of toxic drugs and patent remedies.

References

[1] Weis, C. R.: *Med. Clin. N. Amer.*, 1930, xiii, 1439 ; *Journ. Amer. Med. Assoc.*, 1932, lcix, 21.
[2] Mann, F. C., and Bollman, J. L.: *Arch. Path.*, 1926, i, 681.
[3] Cameron, G. R., and Mayes, B. T.: *Journ. Path. and Bact.*, 1930, xxxiii, 799.
[4] McIndoe, A. H.: *Arch. Path. and Lab. Med.*, 1928, v, 23.
[5] Bauer, W., Dale, H. H., Poulsson, L. T., and Richards, D. W.: *Journ. Physiol.*, 1932, lxxiv, 343.
[6] Freund, J., and Whitney, C. E.: *Journ. Immunol.*, 1928, lv, 369.
[7] Hench, P. S.: *Proc. Staff Meetings Mayo Clinic*, 1932, vii, 427.

INTENSIVE VITAMIN THERAPY IN MEASLES

BY

J. B. ELLISON, M.A., M.D., D.P.H.,

ASSISTANT MEDICAL OFFICER, L.C.C. FEVER HOSPITAL SERVICE

Recent research seems to have crystallized into the belief that vitamin A is concerned with raising the resistance of the animal body as a whole, and the epithelial cells in particular, to various bacterial invasions. The comparative scarcity of human investigations on this subject may perhaps be attributed to the fact that it is not easy to point to any clearly defined group of symptoms associated with a deficiency of this factor in man in any way analogous to the syndromes of rickets and scurvy. There is, however, good evidence for the belief that concentrates rich in vitamin A are valuable as prophylactics against infections.

Vitamin A and Infections

The work of Mellanby and his colleagues[1] on the prevention of puerperal sepsis by the use of such a concentrate appears convincing within the limitations imposed by the comparison of relatively small samples. There is, however, less evidence that a favourable influence can be exerted by such means on the course of a disease already in progress. The results achieved by Mellanby and Green[2] in the treatment (as opposed to prophylaxis) of puerperal infections await further confirmation. In Canada, Wright and his colleagues[3] failed to protect a small series of babies against the " common cold " by supplying them with large amounts of vitamin A, while those contracting the disease did not appear to escape more lightly than the controls. Nevertheless, we are not entirely without indications to guide us in the search for a profitable field for vitamin therapy. In his classical experiments on the deficiency xerophthalmia of rats in 1922, Mori[4] observed atrophy of the mucus-secreting cells in the salivary glands and in the mucous membrane of the larynx and trachea. If vitamin A was withheld for a further period, a local bacterial invasion of these tissues followed. Mori observed that most of his animals eventually died from bronchopneumonia. These findings were confirmed by Cramer and Kingsbury,[5] and similar observations have been made by Steenbock,[6] Mellanby,[7] and others.

Effect on Epithelium of Lack of Vitamin A

The changes which occur in epithelial cells following deprivation of vitamin A have been studied by Wolbach and Howe,[8] and later by Goldblatt and Benischek,[9] who were able to demonstrate metaplastic degeneration in columnar, cuboidal, and transitional epithelia, leading to the appearance of a squamous keratinizing type of cell. Mellanby and Green[10] have suggested that the desquamation of such cells may provide a favourable medium for bacterial growth. In any case it is clear that serious damage to the ciliated epithelium and mucus-secreting cells lining the upper respiratory tract must render the lung alveoli easily accessible to bacterial invasion. Therefore it is in diseases in which the patient's resistance to his own epithelial saprophytes is temporarily in abeyance that we might expect on *a priori* grounds to see benefit from the intensive exhibition of the factor which normally retains the defensive cells in good repair. But there is one considerable difficulty to be encountered in any human investigations on this subject. We cannot compare the condition of a man with that of his brother who has been totally deprived of his vitamin A factor. The point to be decided is whether an adult—or, *a fortiori*, a child—with a very liberal supply of vitamin A is better off in an emergency than one who has perhaps just enough for his normal occasions.

Epithelial Damage in Measles

Now a disease which attacks epithelial defences and whose incidence is greatest in those members of the community who are most likely to be suffering from various grades of vitamin deficiency will probably prove the best medium for testing the therapeutic properties of vitamin concentrates. Measles appears to me to fulfil these criteria. In measles the brunt of the attack falls on epithelial structures. The respiratory tract rarely escapes unscathed. Indeed, the condition of the lungs, trachea, and bronchi in a severe attack bears some resemblance to that which Mori observed in his devitaminized rats. The mucous cells are injured, the ciliated epithelium is shed, and a definite metaplasia is prone to occur in the stroma of the lungs.

Taking advantage of these opportunities, the normally harmless saprophytes, frequently headed by the bacillus of Pfeiffer, invade the lymphatics of the trachea and bronchi, producing in the lungs, through the irritation of their toxins, a further degree of hyperplasia of the inter-alveolar reticulum, easily recognized as the much dreaded "acute interstitial pneumonia" of measles.[11] At the same time the general immunity of the skin is lowered—hence the boils, styes, impetigos, eczemas, and other minor tribulations—or it may be lost completely, leading to the various forms of cutaneous gangrene which are among the major horrors of the disease. The whole alimentary tract is liable to serious catarrh, especially in the Tropics. The Eustachian tube, middle ear, and mastoid cells are liable to dangerous invasion.

Observations on the Vitamin Treatment of Measles

In this country the disease afflicts most heavily the children of the poorest classes, among whom the greatest mortality is observed during the first eighteen months after weaning. Since most of them are suffering from a lack of suitable fats in the diet, it is natural to suppose that they are insufficiently furnished with vitamins A and D. In the present investigation an attempt has been made to decide whether a liberal supply of these two factors at an early stage is able to exercise a favourable influence on the course of the disease. Observations were made on 600 cases of measles in children under 5 years of age, admitted to the Grove Hospital between October, 1931, and April, 1932. These were divided into two equal groups. One received an accurately measured quantity of a rich concentrate of vitamins A and D from the first day of admission. The other received the normal diet supplied in measles. Naturally vitamins were not withheld from them, but they received no liver oils during the febrile stage, though the usual dose of cod-liver oil was supplied during convalescence. Thus the treated cases received a relatively enormous dose of vitamins A and D for a limited period, while the controls received the usual amounts administered to sick children.

Each of the treated cases received 20 minims daily of "adexolin," a cod-liver oil concentrate at present on the market, either in liquid form or in capsules containing an equivalent amount of the vitamins. According to the manufacturers' statement (Glaxo Laboratories) the daily quantity administered amounted to 300 units (Carr and Price) of vitamin A, and 2,000 international units of D—that is to say, approximately the amount contained in one ounce of high-grade cod-liver oil. This dose was continued irrespective of age for a minimum period of seven days in mild cases and for a maximum period of three weeks in those developing complications.

Statistical Data

It is essential before attempting to draw conclusions from such a relatively small sample of the total measles population to show that the two groups were strictly comparable in all respects. In order to secure a perfectly random distribution of cases between the two groups all the cases admitted to certain wards between October, 1931, and April, 1932, received the concentrate, while all cases admitted to the remaining measles wards served as controls. It was necessary to ensure absolute congruence of the two groups in point of time, since it would be clearly unsound to compare cases treated in February with controls selected in June. It was also necessary to obtain a similar age distribution in both groups, because the age of the patient is the most important single factor affecting the prognosis of measles in London.

The age distribution and corresponding death rates in the two groups are shown in the following table:

Table I

	Controls			Treated Cases		
Age	Number	Deaths	Rate per cent.	Number	Deaths	Rate per cent.
0-1	32	4	12.5	31	1	3.2
1-2	90	16	17.8	101	8	8.0
2-3	60	4	6.7	55	1	1.8
3-4	61	2	3.3	61	1	1.6
4-5	57	0	0	52	0	0
Total ...	300	26	8.7	300	11	3.7

These figures require more careful analysis before we can attribute the lower death rates observed in the vitamin-treated cases to the effect of the concentrate. The observed difference of 5 per cent. in the total death rates is approximately 2.5 times the "standard error," or 3.7 times the "probable error" of simple sampling. The most that can safely be said is that in two random samples of 300 cases such a distribution is not likely to occur purely by chance.

A comparison of these figures with those obtained in the previous epidemic appears to increase their significance.

Table II.—*Acute Fever Hospitals, October, 1929, to July, 1930 (L.C.C. Special Report, July, 1931)*

Age	Number of Admissions	Deaths	Rate per cent.
0-1	488	78	15.9
1-2	1,453	201	13.8
2-3	1,110	70	6.3
3-4	1,041	34	3.2
4-5	886	19	2.1
Total	4,978	402	8.1

It will be seen that there is a fairly close correspondence between the death rates of the large group of just under five thousand cases and the controls in the present investigation. A somewhat higher mortality was to be expected in my series, because mild cases occurring towards the end of the epidemic in May, June, and July were excluded. This comparison shows that the expected death rate at these ages lies somewhere between 8 and 9 per cent. ; hence the rate of 3.7 observed in the treated cases appears unusually low.

Effect of Treatment on Pneumonia

These facts are made clearer by a consideration of the following table, which shows the number of cases admitted to hospital either already suffering from pneumonia or developing the complication after admission.

Table III

	Controls		Vitamin Cases	
Age	Cases of Pneumonia	Deaths	Cases with Pneumonia	Deaths
0-1	4	4	4	1
1 2	20	13	13	7
2-3	8	4	8	1
3-4	2	2	6	1
4-5	0	0	1	0
Totals	34 (5)	23 (5)	32 (2)	10 (2)

(Note.—The figures in brackets indicate the number of cases in which pneumonia developed after admission to hospital.)

This table accounts for all the deaths except four—three of the controls and one of the treated cases. These deaths were attributed to acute gastro-enteritis. The pneumonia attack rate of 10.8 per cent. for the total of 600 cases is lower than that usually recorded in measles during the same period of time. This is attributable to the fact that only those cases are included in which no possible doubt could exist concerning the presence of definite pneumonic areas after the disappearance of the rash. A number of doubtful cases have been excluded from both groups.

The distribution shown in Table III is somewhat unfavourable to the controls, though it is noteworthy that the number of cases presenting signs of pneumonia on admission to hospital was greater by one in the treated group than in the controls. It is, however, obvious that the numbers are too small to permit any very fine analysis.

Otitis Media and Skin Lesions

An attempt was also made to determine whether any protection of the middle ear could be obtained with the concentrate. Only cases free from ear discharge on admission and with no history of such discharge in the past were included in the observations. The results are shown in Table IV.

Table IV

Age	Controls	Vitamin Cases
0 - 1	2	2
1 - 2	15	12
2 - 3	4	6
3 - 4	6	6
4 - 5	1	3
Totals	28 (1)	29 (1)

(Figures in brackets indicate cases requiring operation.)

It will be seen that no benefit whatever was obtained from the concentrate in preventing otitis media ; nor was there any perceptible difference in the length of time required for the otorrhoea to cease in the two groups. A negative result has also to be recorded as regards the various skin complications. The figures are too small to be worth recording *in extenso*, but it was quite clear that the vitamin cases did not escape any more lightly than the controls.

General Observations

The dose of the concentrate administered in this experiment was quite arbitrary. It may have been greater than necessary, but it is not possible to state to what extent the vitamins were absorbed and assimilated. Contrary to expectation, enteritis did not prove any drawback to the treatment ; actually this complication proved less troublesome among the treated cases than in the controls. In the only case which proved fatal from acute gastro-enteritis in the vitamin group the complication did not develop until a fortnight after the withdrawal of the concentrate.

The youngest cases were carefully watched for any signs of hypervitaminosis, but this was never detected. In a preliminary experiment I have observed definite signs of intolerance in a marasmic baby who had received 6,000 international units of vitamin D daily for ten days. The symptoms were diarrhoea, anorexia, and marked irritability. Rapid improvement occurred on withholding the vitamin. From a study of recorded cases it appears unusual for clinical evidence of hypervitaminosis to develop in such a short space of time, but it is possible that this child had been receiving vitamin D in some form before admission to hospital. There is no reason to fear that 2,000 units given daily to a baby for two or three weeks will produce any undesirable effects. Vitamin A seems to be perfectly innocuous even in huge doses.

There are no grounds for supposing that the vitamin D in the concentrate exerted any specific beneficial effect on the course of the pneumonias. The work of Goldblatt and Benischek[9] has demonstrated that only vitamin A can claim to possess any protective value against respiratory infections in animals, while recent clinical observations of Friedlaender[12] have shown that the presence of rickets does not seem to affect unfavourably the prognosis in bronchopneumonia. Nevertheless it is possible that some adjuvant effect was obtained from the co-operation of the two factors, since the concentrate "adexolin" is stated to contain them in the natural proportions in which they occur in cod-liver oil.

Conclusions

Although the evidence submitted in this experiment scarcely amounts to a demonstration of the value of intensive vitamin therapy in measles, it is difficult to resist the conclusion that some protective effect was

obtained in the treated cases which tended to limit the severity of the pulmonary complications. The use of a concentrate rich in vitamin A as a prophylactic against secondary infections in a population of young children known to have been exposed to measles might well repay further study. Obviously too much cannot be expected in the way of rescuing cases already desperately ill with bronchopneumonia, since it is almost inconceivable that a sufficiently rapid effect can be obtained by such means.

The total failure to reduce the otological and cutaneous complications is disappointing, but here again it is reasonable to suppose that better results might have been achieved had it been possible to start the treatment during the incubation period, though it is unlikely that the problem will be solved by these means alone. In presenting the results of this experiment I am fully conscious of the dangers of founding arguments on the comparison of relatively small samples.

In a statistical investigation of this nature it is probably wisest to set down an impartial record of what was observed, leaving the reader to draw his own conclusions regarding the significance of the figures obtained.

Summary

1. Three hundred cases of measles received a concentrate of vitamins A and D during the acute stage of the disease: eleven deaths occurred in the series. In a control series of 300 cases having a similar age distribution twenty-six deaths occurred.

2. Evidence is brought forward in support of the view that the pulmonary complications were less severe in the treated cases than in the controls.

3. No difference was detected between the two groups regarding the number of cases developing otological or cutaneous complications.

My acknowledgements are due to Dr. J. H. Whitaker, medical superintendent of the Grove Hospital, for permission to make use of the clinical material at the hospital, and also to the director of the Glaxo Laboratories for a liberal supply of the concentrate "adexolin."

References

[1] Green, H. N., Pinder, D., Davis, C., and Mellanby, E.: *British Medical Journal*, 1931, ii, 595.
[2] Mellanby, E., and Green, H. N.: Ibid., 1929, i, 984.
[3] Wright, H. P., Frosst, J. B., Puchel, F., and Lawrence, M. R.: *Canadian Med. Assoc. Journ.*, 1931, p. 412.
[4] Mori, S.: *Bull. Johns Hopkins Hosp.*, 1922, xxxiii, 357.
[5] Cramer, W., and Kingsbury, A. N.: *Brit. Journ. Exper. Path.*, 1924, v, 300.
[6] Steenbock, H.: *Journ. Path. and Bact.*, 1924, iv, 27.
[7] Mellanby, E.: *British Medical Journal*, 1926, i, 515.
[8] Wolbach, S. B., and Howe, P. R.: *Journ. Exper. Med.*, 1925, xlii, 753.
[9] Goldblatt, H., and Benischek, M.: Ibid., 1927, xlvi, 699.
[10] Mellanby, E., and Green, H. N.: *British Medical Journal*, 1928, ii, 691.
[11] Ellison, J. B.: *Arch. Dis. Child.*, 1931, vi, 37.
[12] Friedlaender, A.: *Ugeskrift for Laeger*, 1931, p. 1174.

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

TWO CASES OF TRAUMATIC ANEURYSM

Nowadays traumatic aneurysms in hospital practice are comparatively rare, so that the occasion of two cases occurring within the space of three months is my excuse for reporting them.

Case I

A butcher boy came up to the West London Hospital in May last year stating that he had cut his left forearm in the following manner: he had, whilst steadying a carcass with his left hand, thrust a knife into it. He had been holding the knife in his right hand, dagger-like, and had obviously misjudged the thrust. This was followed by a spurt of blood about 2 feet high, which he had stopped with digital pressure.

On examination he had a small punctured wound on his left lower forearm about 2 inches above the wrist-joint, in the line of his radial artery, with some deep haematoma. As it seemed that ligature of the radial artery was likely to be necessary, the tourniquet was left on until the patient was taken to the theatre. On its removal, however, no further haemorrhage took place, and one found it difficult to believe his story of the "two-feet-high jet." The skin wound was cleaned and sutured, primary union taking place.

From the day of the operation he was given a wrist strap to prevent the possible formation of any aneurysm in connexion with the injured artery. The patient came up to the hospital two months later, complaining of a swelling which was obviously an aneurysm of his radial artery; this, he stated, was getting larger. Mr. Wood Walker also saw the case and advised operation.

At the operation the radial artery was ligatured proximally and distally to the aneurysmal sac, which was excised, the venae comites tied off, and the wound closed. The subsequent course of events was of an unexpected nature. The next day the hand became very swollen and blue, but as this was thought to be a transient condition he was ordered to soak the hand in hot baths and to keep the arm elevated in a sling. During the next few days the condition became worse, the wound gaped, and it looked as though a mild degree of gangrene would set in. Electric baths and radiant heat were ordered, and for the next week the condition remained stationary. However, within a fortnight of the original operation the trophic condition of the hand greatly improved, healing took place, and movements were again permitted.

There appear to me several possible explanations of this sequence of events, which obviously followed the ligation of the radial vessels. First, that the ulnar artery was either absent or that it was too small to act as an anastomatic channel to maintain the nourishment of the limb, which it should have been capable of if it was of normal size and not diseased. The other explanation, which in the case of the hand surely could not have been a factor, was the ligation of the radial veins. When seen three months after the operation the circulation of the hand was perfect.

Case II

A man, aged 23, fell from his motor bicycle, and appeared when first seen to have merely abrasions on his forehead and temple. Two days later he came up because two pulsating swellings had appeared on his right temple. These proved to be two aneurysms, each about one inch long and three-quarters of an inch wide, arising from the two anterior branches of his superficial temporal artery. In this case, after evacuating the contents of the sac by digital pressure, the vessels above and below were ligatured through small incisions, whilst the sacs were kept compressed. This treatment proved satisfactory, and a week later it was impossible to see any bulging, though the sacs could just be felt after careful palpation.

Pathology

The specimen of the aneurysmal sac in the first case is interesting, as in most cases of aneurysms of the traumatic type the sac is either that of the false type formed by the condensation of the surrounding tissues with a deposition of blood clot, which after a time forms a fibrous internal layer, or else the vessel wall is merely damaged and not actually perforated, when an aneurysm of the sacular type may be expected. But the arrangement in the first case described was a combination of both sacular and dissecting types, the sacular part being the expanded external coat, whilst the dissecting part consisted of a stripping of the external from the middle coats, thus allowing an intramural extravasation of blood up and down the vessel for nearly an inch.

Microscopical section of the external coat shows much fibrous tissue, probably mainly protective reaction to the stretching of the muscle fibres, but also evidence that the external coat had been perforated at the original injury.

But whereas the union had been firm in the case of the external coat, the middle and endothelial coats had given way under the internal pressure, thus leading to the formation of an aneurysm.

G. O. Tippett, M.B., B.S., F.R.C.S.,
Late Casualty and Out-patient Officer,
West London Hospital.

DIFFUSE SUPPURATIVE LABYRINTHITIS WITH EARLY SYMPTOMS OF MENINGITIS. OPERATION: RECOVERY

I feel that the following case warrants publication, since diffuse labyrinthitis with symptoms of early meningitis is of such grave prognosis that recovery is worthy of record.

The patient, a woman 22 years of age, had suffered from purulent discharge from both ears since she had scarlet fever eleven years before. I was asked to see her on October 31st, 1931. Three weeks previously she began to suffer from giddiness, vomiting, deafness, and tinnitus, the last two symptoms being referred to the left ear. These symptoms, after being severe for a few days, subsided, and she improved until two days prior to my attending her. During these two days the giddiness had got worse and the vomiting recommenced. These symptoms continued up to the time when I first saw her. She then presented the following symptoms: headache, drowsiness, slow pulse (62), temperature 97.8°, and marked constipation. Her tongue was furred but moist.

The left ear showed a profuse, foul-smelling, purulent discharge. After cleansing the meatus I found that the tympanic membrane had been totally destroyed. The Weber test lateralized to the right ear, and absolute deafness was present in the left ear. Rotatory nystagmus to the right, of third degree, was present. The right ear also presented a foul, purulent discharge, with a postero-inferior perforation of the tympanic membrane. The hearing in this ear was moderately good, the conversation voice being heard at eight feet.

The caloric tests were carried out, and it was found that while there was no response from the left ear, the right ear reacted normally. There was no nuchal rigidity, Kernig's sign, inequality of the grip, or dysdiadokokinesia. Lumbar puncture revealed the cerebro-spinal fluid to be under greatly increased pressure but clear macroscopically. Microscopical examination showed an increased cell count. The culture proved to be sterile.

The patient was admitted to hospital without delay, and operation was carried out that evening (October 31st).

I performed the radical mastoid operation on the left ear, followed by the Hinsberg labyrinth operation. Cholesteatoma was found to be present with granulation tissue in the region of the vestibule. The post-auricular wound was left widely open and no plastic operation was performed. The whole wound was packed with bipped ribbon gauze.

On the following day the patient's general condition had improved and no vomiting had occurred since the operation.

On November 2nd the case was dressed and the local appearances were satisfactory. There had been no vomiting and the temperature was now down to normal, following a rise to 101° on the evening of November 1st.

On November 3rd signs and symptoms of toxic myocarditis began to evidence themselves. Heart-block developed, and this continued for about eight days, after which the cardiac condition gradually returned to normal. On account of this heart condition it was considered unsafe to administer any anaesthetic, and therefore the plastic operation on the meatus and post-auricular wound was postponed.

Eventually, on December 9th, it was decided that she was in a fit state to have the operation on the soft parts performed. This was carried out on December 10th, the meatus being enlarged by Korner's method. The scar tissue and sinus behind the ear were excised and the mastoid cavity was packed with bipped ribbon gauze, the end of which was brought out of the enlarged meatus in the ordinary way.

The patient made an uneventful recovery and was discharged from hospital on December 31st, 1931.

Donald A. P. Macalister,
F.R.C.S.Ed., D.L.O.
Visiting Aural Surgeon, Gulson Road Municipal Hospital, Coventry.

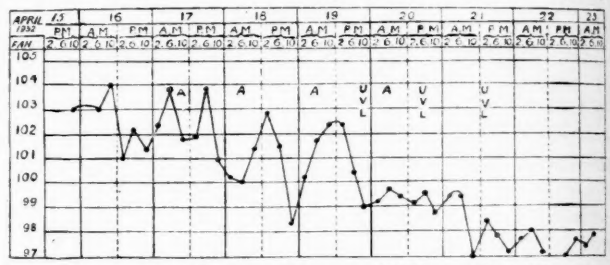
A CASE OF ERYSIPELAS IN AN INFANT

The beneficial effect of anti-streptococcal serum in a desperate case of streptococcal meningitis has lately been described in these columns by Trounce and Douthwaite.[1] This and a recent article on phototherapy in erysipelas[2] has prompted us to recount the following case, in which a combination of the two remedies produced very rapid recovery in the case of an infant with erysipelas.

Case Record

A female infant, aged 4½ months, was seen by one of us (D. H. F.) on April 14th, 1932, and was found to have an acute inflammation of the left thigh and a temperature of 103°. Four weeks previously the child had been vaccinated on the external surface of the left thigh, one insertion being used. The vaccination was successful, but the area did not heal satisfactorily, and it was around this point that the skin inflammation began. On April 16th the inflammatory area was steadily spreading from the central slough in a manner which left no doubt that the infection was erysipelas. At that time the temperature was still in the region of 104° F., and the child extremely ill, toxic, and drowsy. Dressings of 10 per cent. ichthyol in lanoline were applied locally.

On April 17th 5 c.cm. of anti-erysipelas serum (B. W. & Co.) was injected intramuscularly. This was repeated on three successive days, bringing the total amount used to 20 c.cm. The effect of the serum on the temperature was most marked, a drop occurring twenty-four hours after the first injection. The two subsequent doses appeared to have their maximum effect after twelve hours, and the pyrexia subsided completely after the fourth and final injection (see chart). Equally



A = anti-streptococcal serum, 5 c.cm. U.V.L. = ultra-violet light.

marked was the improvement in the patient's general condition: after two doses of serum the toxic state was distinctly less and the child began to take its feeds quite well again. On the other hand the serum was noticed to have no effect on the local condition, which proceeded to spread in a typical manner until the whole lower limb had become involved down to the ankle and up over the whole left buttock and left labia. Ringing round an inch from the spreading edge with tr. iodi. fortis had not the slightest effect, and as there seemed to be danger of the infection spreading up into the flank and possibly to the other side it was decided to try the effect of ultra-violet light. Three radiations were given on subsequent days, each amounting to a suberythematous dose, the rays being directed to the area just beyond the spreading edge, with the lesion itself protected from the light. The result of this therapy was most dramatic; the erysipelas immediately ceased to spread into the areas which had been irradiated, and after the third dose the whole lesion had practically cleared. Thereafter the progress of the case was uneventful with the exception of a latent infection in one of the left inguinal glands, which broke down and had to be evacuated three weeks later.

Comment

Erysipelas in young infants is a dangerous disease with a high mortality. The complete and rapid cure of this case in eight days we believe to be directly due to a combination of anti-streptococcal serum given early in the infection and the subsequent use of ultra-violet light. It is perhaps a significant fact that ten days after the onset of this severe illness the child had gained eight ounces in weight.

Bernard Schlesinger, M.D., M.R.C.P.
London, W.1. D. H. Fraser, O.B.E., *M.C.*, M.D.

[1] *British Medical Journal*, 1932, i, 752.
[2] Ibid., 1932, i, 929.

Reviews

INFLUENCE OF PREGNANCY ON GROWTH

Dr. E. Agduhr of Upsala has recently published[1] an account of some interesting work on the influence of pregnancy and of ergosterol feeding on the growth of mice. Female mice are normally smaller than males, but the author observed that after repeated pregnancies the weight of the females approximated to that of the males. On the other hand, he noted that animals which received big doses of ergosterol were frequently below the average in weight. These results were investigated more fully by feeding experiments on groups of mice, which were continued over periods of about eight months. There were two main groups and two subsidiary groups. In one main group the mice were allowed to pair freely; in the other the sexes were kept apart. Half the animals in each of these groups were fed on a normal basal diet, while those in the other half had large doses of ergosterol. The author found that repeated pregnancies caused a considerable augmentation of the body growth of females, and that this increase was most pronounced in those given ergosterol. On the other hand, big doses of ergosterol caused a retardation of body growth in animals deprived of sexual intercourse. In the case of males some observations suggested that increased sexual function checked the growth of several organs.

The effect of sexual activity and of ergosterol upon the development of certain endocrine glands was also studied. Repeated pregnancies caused increase in weight of the anterior and posterior portions of the pituitary gland, and this increase was augmented by ergosterol feeding. In males, on the other hand, increased sexual function appeared to retard the growth of the pituitary gland, and ergosterol feeding did not cause any certain increase. Repeated pregnancies also caused augmented growth of the thyroid gland, while ergosterol feeding in males and in non-breeding females retarded the growth of the thyroid gland.

These interesting experiments suggest that, at any rate in the case of mice, sexual activity has a considerable influence on the development of the pituitary and thyroid glands, and thus influences the growth of the body. The fact that these endocrine changes may modify the effect produced by ergosterol is also of very great interest.

"THE WISDOM OF THE BODY"

The outstanding feature of the physiology of to-day is the rediscovery of Claude Bernard, and the vindication of those broad principles of biological thought which he advanced by his researches, and which are handed to posterity in the form of his various "Leçons." The most recent champion of the physiology of adaptation is Professor W. B. Cannon, the distinguished head of the Harvard School of Physiology, whose book *The Wisdom of the Body*[2] represents a clear and elementary, but modernized, version of Claude Bernard's attitude towards biological problems. The title is the same as that given by the late Professor E. H. Starling to the Harveian Oration which he delivered before the Royal College of Physicians in 1923, and has been chosen by the present author as a token of his admiration for, and agreement with, the views there expressed. His exposition is at much greater length and more general in its outlook than that of Starling, however, and represents in fact an elementary treatment of many of the important problems of physiology from the point of view of the adaptation of the organism to its changing environment. The wrapper describes the book as

> "The first detailed account of the way in which our bodies preserve their stability against the many disturbing forces they encounter, suggesting that the lessons to be derived from the body's wisdom might be applied to problems of social and economic stabilization."

This pithy blurb is, in fact, hardly an exaggeration, for, although the book contains little with which physiologists are not already familiar, yet it differs from other books in that it looks at the problems of physiology from the viewpoint of adaptation, and from that point alone. And there is a very great deal to be said for it as a method of logical approach to the subject.

It would be impossible to follow the author through his whole argument, and this is already familiar to physiologists who have read his review on "Organization for physiological homeostasis" in *Physiological Reviews* for 1929, in which he brought together much of his own work and thought along these lines. The opinions here stated represent an elaboration and development of those contained in his book *Bodily Changes in Pain, Hunger, Fear, and Rage*, and in his various other publications. But none of his former writings have had the same breadth of treatment as is shown in this book. Its keynote is that the various functions of the body are directed towards the stabilization of the conditions in which the cells of the body live; when adverse circumstances threaten to alter these conditions processes are set in action which bring them back towards the normal. Many of such processes are governed by the autonomic nervous system. Various illustrations are given of the operation of these stabilizing forces, ensuring proper composition of the blood and lymph, proper temperature, etc., and the author shows that the sympathetic nervous system, together with the suprarenals, is of great importance in helping the adaptative phenomena.

After discussing the general features of stabilization, Professor Cannon, in an epilogue, looks on the body politic from the biological point of view. The achievements of medico-social work in the mitigation of the effects of epidemics, and in the betterment of health generally, have all involved organization, control, and a lessening of the independence of individuals. The purposes of economic and sociological programmes similarly recognize that

> "the social organism, like the bodily organism, cannot be vigorous and efficient unless its elements are assured the essential minimal conditions for healthful life and activity. And the possession of a mind by the human elements would require that these conditions include not only provision for the elementary needs which we have been considering, but also reasonable satisfaction of desires. . . . The hope is not unreasonable that the distress arising from catastrophes can be greatly mitigated, and that the suffering due to lack of necessary things which is attendant on great economic fluctuations can be obviated, by carefully planning and by intelligently regulating the processes of production and distribution."

Social homeostasis would release the highest functions of which mankind is capable, just as the involuntary nervous system, by its devotion to the welfare of our bodies, liberates the higher parts of the central nervous system from these tedious duties. Though some may find the analogy which is drawn between the body and the State to be rather a strained one, it seems likely that a majority of those with a biological training will sympathize with, and indeed already hold, some such view as the one expressed by Professor Cannon in this most interesting book. They will sigh once more when they reflect

[1] *Zur Kenntnis des Einflusses der Graviditaten und des Ergosterins auf das Wachstum.* Von Erik Agduhr. Aus: Upsala Läkareförenings förhandlingar Ny Foljd. Bd. xxxviii, 1-2. Upsala: Almquist and Wiksell. 1932. (Pp. 82; illustrated.)

[2] *The Wisdom of the Body.* By Walter B. Cannon, M.D., Sc.D., LL.D. London: Kegan Paul, Trench, Trubner and Co., Ltd. 1932. (Pp. 312; 41 figures. 12s. 6d. net.)

that it is likely to be long before the view is abandoned that the best education for our leaders is one in which science of any kind has a very back seat, and biology none at all. Lastly, it should be mentioned that the book is so readable and the treatment so clear that it would not be too much, even in these hurried days, to advise students to read it; they would be well repaid for their pains.

PAEDIATRICS

Pediatrics,[3] edited by Professor Isaac A. Abt, with the help of Dr. Arthur F. Abt, is one of eight volumes in a series designed to review the year's progress in medicine and surgery, and the year dealt with in the present volume is 1931. Under various headings, such as feeding of infants, the heart, ductless glands, therapeutics, etc., the principal publications dealing with these subjects in the twelve months are annotated and summarized with the occasional interpolation of a critical review—as, for example, on the thymus puzzle (where an editorial from these columns is quoted almost in full)—and with here and there a wise remark by the editor on the subject which has been noted. The literature reviewed appears to be world-wide, and to the reviewer it was rather depressing to note how little progress in 1931 in paediatrics appeared to have come from this country. Rheumatism is an exception to this remark, and the work of Schlesinger and Sheldon and others is given due credit. The introduction to the volume contains a valuable account of the present state of training in paediatrics and its future developments. Altogether this is a most useful publication, both as a work of reference and as a review of the latest methods of diagnosis and treatment.

Another valuable reference book has just been issued, in which Dr. Joachim Brock supplies *Biological Data for the Paediatrician*,[4] this being the first volume of a bigger work. It contains an account of the normal findings as regards growth and development, first of the whole young organism, foetal and post-foetal, and secondly of the various systems and organs of the body. Each section is complete with a full list of the literature, and the book is likely to become a standard work of reference. The sections on the blood and on the alimentary tract appear the best in the present volume, and throughout there are valuable tables of constants and indices. The second and concluding volume is to contain sections on metabolism, respiration, the nervous system, etc., and a number of experts are to contribute their special knowledge. There is certainly a place for a work of this kind, and German thoroughness is particularly well adapted to its production. It is a pity that the complete work has not appeared in one volume with a more substantial binding.

Another new book devoted to presenting data of normal children is *Growth in Private School Children*,[5] by Horace Gray and J. G. Ayres, a recent addition to the "Behaviour Research Fund Monographs." It may seem strange that a research directed into psychological problems should have this anthropometric section, but it is a perfectly logical proceeding, and the painstaking nature of the detailed description of instruments and methods used is of a high scientific standard. Chapters on sex, race, and regional differences are included, and a very full list of references is provided. While probably too technical and complicated for the ordinary physician concerned with children's diseases, this book is nevertheless a valuable addition to the literature of normal human standards.

The fourth revised edition of *Management of the Sick Infant*,[6] by Professor Langley Porter and Dr. W. E. Carter, is an excellent production, and there is no other book in the English language which quite compares with it. The principal disorders of the first months of life are fully dealt with, and the section on methods, formulae, and drugs is amazingly complete and thoroughly practical.

SIR BERTRAM WINDLE

In *Sir Bertram Windle : A Memoir*,[7] Dr. Monica Taylor has successfully obeyed the principle of biography, as once expressed by Sir Bertram, that the subject of such a memoir should be allowed to tell his own story by means of letters and extracts from his own writings and utterances. Windle was the son of an evangelical clergyman of the Church of England, his mother coming of an old Irish Protestant family. His threescore years and ten (1858–1929) were full of varied interests and activities, and presented some rather curious contrasts. When a schoolboy at Repton he was not distinguished in the classical routine or in games, and yet he became in after-life a mental athlete and a pioneer in higher education. But no more than William Bateson, also with a school record wanting in prophetic promise, would he at any time of his life have abolished the teaching of Latin and Greek. His early ambition—and indeed his lifelong love—was for the sea ; but this was not to be. Entering Trinity College, Dublin, in 1875, he had a most successful career in literature and science. In order to devote his life to science he went in for medicine, and was a pupil and research worker under the fascination of that great man Professor Alexander Macalister. When an undergraduate he openly declared himself as an agnostic, but a few years later, in 1883, he was received into the Roman Catholic Church, and from that time religion became the mainspring of his life. In 1882 he became resident pathologist at the General Hospital, Birmingham, two years later professor of anatomy in Queen's College, and in 1891 dean of its Medical Faculty. This was a period of great activity as an anatomical teacher and worker, archaeologist, organizer, and as a most energetic spirit in the establishment of the University of Birmingham in 1900. In 1899 he was elected F.R.S. He migrated to Cork in 1904 to be president of Queen's College, and during the next fifteen years, which included the troublous times of the war, he was perhaps even more energetic than at Birmingham, and did his utmost to bring into being a University of Munster ; the failure of this was a keen disappointment. The third and last part of his life as an educationist—the ten years 1919–29—was spent at Toronto, where, as a professor, he was free from the engrossing administrative duties he had carried on at Birmingham and Cork ; he found an outlet in widespread activities in the intellectual life not only of Canada but in the United States. This memoir gives a graphic account of a man of wonderful energy and many parts.

[3] *Pediatrics.* Edited by Isaac A. Abt, M.D., with the collaboration of Arthur F. Abt, M.D. The Practical Medicine Series. Chicago: The Year Book Publishers. 1932. (Pp. 569 ; 37 figures.)

[4] *Biologische Daten für den Kinderarzt.* Von Dr. Joachim Brock. Berlin: J. Springer. 1932. (Pp. 252 ; 23 figures. RM.18.60 ; Geb., R.M.19.60.)

[5] *Growth in Private S... Children. With averages and variabilities based on 3,110 ... rings on boys, and 1,473 on girls, from the ages of one to nineteen years.* By Horace Gray and J. G. Ayres. Behaviour Research Fund Monographs. Chicago: The University of Chicago Press ; London: Cambridge University Press. 1932. (Pp. xv + 282. 26s. net.)

[6] *Management of the Sick Infant.* By Langley Porter, B.S., M.D., M.R.C.S., L.R.C.P., and William E. Carter, M.D. Fourth revised edition. London: H. Kimpton. 1932. (Pp. 763 ; 79 figures. 42s. net.)

[7] *Sir Bertram Windle : A Memoir.* By Monica Taylor, S.N.D., D.Sc. London: Longmans, Green and Co. 1932. (Pp. xii + 428 ; 4 photographs. 12s. 6d. net.)

HALLUCINATIONS

Neurobiologie de l'Hallucination[8] is the outcome of well-nigh a score of years' research by its author, Dr. Raoul Mourgue, whose work *Introduction Biologique à l'Étude de la Neurologie et de la Psychopathologie*, written in conjunction with the late Professor Von Monakow, was reviewed in our columns on February 2nd, 1929. It is a scholarly and painstaking piece of research. Of necessity it does not make easy reading, but that is inherent in the nature of the subject-matter and not due to any lack of clarity in the author's expression of his views. These views are pre-eminently biological views. In the earlier work above referred to, the subject of hallucinations was not discussed ; but Dr. Mourgue had already discovered that his own theories of hallucination differed widely from those held by his distinguished collaborator, who found a sufficient explanation for their occurrence on the assumption of an intensification of the mental image. Finding nothing to his purpose in the theories of academic psychology, Dr. Mourgue has expressed his indebtedness to Bergson's works, especially *Matter and Memory*, where the biological point of view has been largely coincident with his own ; and it is to Bergson that the present work is dedicated, and from his pen that the interesting prefatory note is appended. In view of the fact that the author designates an hallucination as an eruption from the sphere of the instincts into the world of causality and orientation, one might imagine that he would have found common ground with the psycho-analytic school, but the language of that school is utterly at variance with that which he has chosen to use, and its outlook, in his opinion, is insufficiently biological. Dr. Mourgue's contribution to a singularly difficult subject will well repay study.

Notes on Books

The *British Pharmacopoeia, 1932*, was published on September 30th, and in our issue of July 9th (p. 69) we gave an anticipatory account of its main features. Some 360 articles and preparations that were included in the *British Pharmacopoeia, 1914*, have now disappeared, and 128 become official for the first time. Alterations have been made in the composition and strength of about fifty preparations, and the names of certain articles have been changed in compliance with the provisions of the international agreement. *The B.D.H. Guide to the B.P. 1932* is a well-produced book of over a hundred pages, issued by the British Drug Houses Ltd., Graham Street, City Road, N.1, who offer a free copy to any medical practitioner who cares to apply. Its purpose is to direct attention to the changes made, with particular reference to preparations that differ materially in composition or strength from the corresponding items in the *B.P., 1914*, and to those that now become official. A fifteen-page introduction briefly describes the scope of the new *Pharmacopoeia* and the main principles upon which it has been constructed. Detailed information is well set out in alphabetically grouped "Notes upon the official monographs."

"The Properties of Milk in Relation to the Condensing and Drying of Whole Milk, Separated Milk and Whey: A Review of Existing Knowledge,"[9] by L. A. Allen, M.Sc., Ph.D., is the third bulletin issued by the Hannah Dairy Research Institute. The director of the Institute, in a preface, points out that about half the milk produced in this country is used for liquid consumption, and that it is essential for the development of the British dairy industry that economic processes for the manufacture of the remainder into milk products should be developed. He notes that condensing and drying have the special advantage in that they involve no loss of any valuable constituents, and that we at present import about three million hundredweight of condensed and dried milk. The bulletin gives a summary of the chemical and physico-chemical properties of milk, and the effects produced by heat. This is followed by chapters dealing with the production of condensed milk and milk powders. The economic importance of the problems considered is indicated by the fact that the loss due to wastage of whey is estimated at £1,000,000 annually. This could be saved by the discovery of some method of extracting the lactose and lactalbumin in an economic manner. The author has directed his attention chiefly to the physico-chemical problems presented by the subject, but allied problems of bacteriology and of vitamin preservation are also considered.

Dr. Broom, the author of a new book on *The Mammal-like Reptiles of South Africa*,[10] estimates that in the Karroo Beds in South Africa there are the remains of at least 800,000 millions of animals. The mammal-like reptiles found in these beds are probably the most important fossil animals ever discovered, their importance lying in the fact that there is little doubt that among them are the ancestors of the mammals and the remote ancestors of man. The greater part of this valuable book is taken up with classified descriptions of these remains, illustrated by restored drawings of their skulls. The most interesting general chapter is that dealing with the origin of mammals. In this, Dr. Broom traces the probable process of evolution of the primitive mammal from the reptiles. He believes, however, that now further evolution among mammals is limited to the secondary modifications of already existing types, and, with this reservation, that evolution has ceased with man as the final product. This volume, which is well and carefully produced, is a contribution of first-class importance to the subject of evolution and a stimulus to new and intensive work on this interesting series of fossils.

The author who "popularizes" has often received rather unfair treatment from his scientific brethren. Though the reasons for their criticism are many, few will bear close examination in an age which calls for a wide grasp of a great diversity of subjects by men and women in many different walks of life. The art of expounding technical subjects to non-technical administrators is not only difficult, but all too rare, and those who do it well are performing a public service without which administration in a scientific era would become impossible, and the best work would remain for ever hidden in technical journals. In *Muscular Work, Fatigue and Recovery*,[11] Dr. G. P. Crowden has performed the task of explaining the various aspects of his subject with lucidity, accuracy, and no little literary charm. His object is to interest the industrialist in one highly important aspect of his duty both as a producer of goods and as an employer of labour. He deals well with the speed of machines and their specific design, emphasizing the need for correlating both with the basic facts of human physiology. Nutrition, oxygenation, cooling power, and the question of fatigue are discussed in a manner which any intelligent person can follow, while the mechanical and economic problems associated with these phenomena are admirably concise and clearly put. Rest pauses and posture should acquire a new interest for the employer of labour. Two excellent tables of energy expenditure will be of interest and utility to any medical practitioner associated with industry. Originally presented as the Heath Clark Lectures for the National Institute of Industrial Psychology, the matter has been well adapted to book form and makes a splendid little survey, which should be widely read by engineers and industrialists and not ignored by medical advisers to factories.

[8] *Neurobiologie de l'Hallucination. Essai sur une Variété Particulière de Desintegration de la Fonction.* Par Raoul Mourgue. Brussels: Maurice Lamertin. 1932. (Pp. 416. Prix fixe: 91 fr. ; exportation, 65 fr.)

[9] Glasgow: Aird and Coghill, Ltd. 1932. (4s. 6d. net. ; 4s. 9d. post free.)

[10] *The Mammal-like Reptiles of South Africa.* By Robert Broom, D.Sc., F.R.S. London: H. F. and G. Witherby. 1932. (Pp. xvi + 376 ; 111 figures. 25s. net.)

[11] *Muscular Work, Fatigue and Recovery.* By G. P. Crowden, M.Sc., M.R.C.S., L.R.C.P. London: Sir Isaac Pitman and Sons, Ltd. 1932. (Pp. ix + 74 ; 6 plates. 3s. 6d. net.)

INTERNATIONALISM IN SCIENCE

[From our Correspondent in Geneva]

Intellectual co-operation is one of the objects of the League of Nations, and has been well embodied in the International Institute in Paris, which is one of the instruments of the League, although under the special patronage of the French Government. Like the other objects, intellectual co-operation is slow of fulfilment and liable to continual frustration, despite the fact that in this field the national oppositions are not evoked in the same way as they are in the fields of politics and economics. The idea of it has to overcome scepticism, lethargy, and a widespread feeling that after all it is—even more than health organization or communications and transit—a diversion, serving no very practical purpose towards the main business of ensuring peace and lessening armaments. Nevertheless, the report on intellectual co-operation which has been presented to the Assembly now meeting in Geneva describes, among other matters, four interesting enterprises in various stages of development, all of them having the object of serving the spirit of internationalism in science.

Mme Curie, the chairman of the committee of scientific advisers, is the moving spirit in all these undertakings, ably seconded by M. Painlevé, an ex-Premier of France. The first is the co-ordination of scientific bibliography. As M. Painlevé states, the method of preparing bibliographies of science calls for much more expert handling than is the case in bibliographies of, say, history, law, or social evolution. Persons without any very specialized knowledge can analyse intelligibly a work on any of the latter subjects, but only an expert can summarize with the necessary accuracy and sense of proportion works on chemistry, physics, medicine, or any of the natural sciences. The absence of an adequate bibliography of works in these realms has meant that discoveries—sometimes important—in the smaller countries, and recorded in one of the lesser-known tongues, are overlooked and not utilized. The Committee of the Institute of Intellectual Co-operation has drafted certain rules for the preparation of summaries of scientific articles in reviews, and an endeavour is now being made to secure the adoption of these rules by all scientific societies in their journals. The committee has been in touch with the Royal Society, and that body has invited contributors to its *Proceedings* to append to their papers summaries drafted in accordance with the rules proposed. Favourable opinions on the project have also been forthcoming from the corresponding bodies in France, Germany, Belgium, Holland, Spain, Rumania, the United States, and Japan. Certainly a well-prepared and penetrating analysis of a scientific article which could be published broadcast in as many languages as possible would be of great service to scientific workers in every field, and would save much time in research and avoid waste and duplication.

The second enterprise is the co-ordination of scientific terminology. A number of bodies interested in physics, chemistry, and biology—these subjects being taken as a beginning—have been asked to suggest unifications of the terminologies employed. It is proposed to establish an international centre of scientific documentation—rather a high-sounding phrase—in order that scientific terms and expressions may be as far as possible interchangeable in every language. The scientific glossaries already in existence are being collected, and a critical report on them is to be made. If some uniformity could be obtained with regard to constants, numbers, symbols, weights and measures, and abbreviations, there would be great gain.

The third enterprise is the establishment of a liaison between scientific museums in all countries. The request that something might be done in this respect emanates from the United States, where there are a large number of such museums. At present it has gone no further than an inquiry to ascertain the exact point at which co-operation would be desirable, and the formation of a small committee of directors of such museums to prepare a programme. Many scientific museums have been consulted, and their replies have already made it possible to visualize a useful result.

The final piece of work, also in an early stage, is the proposed publication of a list of scientific laboratories, which the institute has been asked to prepare with a view to the issue of a handbook of places where research is carried on and of the facilities afforded at each place for foreign research workers to gain experience. The first inquiry is to relate to laboratories of physics, and a questionary has been sent to 3,000 such laboratories in various countries. Thus the way is being slowly paved for a scientific progress which will no longer be hindered by differences of language and national prejudices.

CONGRESS ON BILIARY LITHIASIS

At the International Congress on Biliary Lithiasis, which was held at Vichy from September 19th to 24th, and was attended by delegates from all over the world, the principal papers dealt with: (1) the sequelae of cholecystectomy; (2) the medical hydrotherapeutic treatment of biliary lithiasis; and (3) the lithiasistic liver.

Professor D. P. D. Wilkie of Edinburgh reviewed the rationale of cholecystectomy, and classified his cases into the following types: (1) acute obstructive cholecystitis, (2) that with biliary colic as the main symptom, (3) chronic dyspepsia without colic, and (4) that with remote toxic effects. In the first type operation during the period following the subsidence of the acute attack gave good results, and very often showed improvement of lung condition on the right side which had been due to immobility of the right cupola of the diaphragm. The biliary colic type was usually represented by fat constipated people, who obtained most benefit when the operation was preceded and followed by medical treatment. The flatulent dyspepsia types, which produced many good results alone but a higher percentage of cures when associated chronic appendicitis, duodenitis, or gastric ulcer, were treated as well. The patients with remote effects of chronic cholecystitis were either thin people with myocardial lesions due to toxins from the gall-bladder, or very fat females with similar toxic effects in a fat-laden heart; the former gave good results, the latter only if medical treatment was given for the obesity. In this type he included cases of rheumatism and nephritis which had improved by cholecystectomy. He pointed out that the cases in which bilious attacks and headaches were common did not do well, because they were often associated with constitutional hepatic disorder. Dr. Victor Donnet (New York) pointed out that cholecystectomy should not be performed unless medical treatment failed and the gall-bladder function was grossly impaired, because of the dyspepsia which followed owing to the passive dilatation of the whole of the biliary system. Drs. A. Gosset and D. Petit Dutailles (Paris) mentioned jaundice due to obstruction of the common bile duct by calculi left at the operation, stenosis of the duct, and by adhesions causing extensive compression. Dr. C. Giraud (Montpelier) stated that many of the sequels were due to a residue of the liver disturbance which was present before the operation, and which reacted to medical treatment only after operation. Dr. H. Béclère (Paris) showed the value of *x*-ray diagnosis in revealing post-operative fistula and calculi in the biliary system, or, by combined *x*-ray of stomach and duodenum, sequelae due to kinking of the duodenal cap.

Drs. M. Chieray (Paris) and I. Parel (Bucarest) pointed out the value of medical biliary drainage in relieving jaundice due to calculus and in moving a calculus forward, and in relieving after-operation pain due to spasm of the sphincter of Oddi. Dr. E. Chabrol (Paris) mentioned the use of intravenous sodium oxynaphtholate and atophan magnesium sulphate and water of Grand Grill in drainage of the liver cells and interstices (choleretics as distinct from cholagogues). This was valuable following acute infections as a prophylactic in chronic cases between attacks. Dr. P. Abrami mentioned the experimental work on ionic antisepsis—moving the *p*H of bile to the alkaline side and thus rendering it unsuitable for many bacteria. He referred also to the value of intravenous injections of urotropine in association with medical drainage. Professor F. Umber (Berlin) stressed the effect on the liver cells of biliary obstruction, producing a picture like subacute yellow atrophy (hepatosis), and the value of glycogen to the liver cell. He suggested a diet rich in laevulose and glucose, with insulin injections, in association with biliary antisepsis and hydrotherapy.

Drs. L. Delherm and H. Dausset (Paris) showed that true hepatic stones contained less cholesterol than the gall-bladder stones, and expressed the view that both occurred with a calculous diathesis. Dr. M. Bule (Paris) mentioned the obstructive jaundice of a hepatitis and its differentiation from common duct obstruction by the marked enlargement of the liver in the second case, and the differential diagnosis of jaundice due to cancer and stone in the common duct—in the latter bile could be obtained by duodenal drainage. Drs. P. Harrier and J. Caroli said that, in cases of jaundice due to stone, biopsy of the liver showed lymphocytic infiltration of the organ and, in later stages, lesions like subacute yellow atrophy. These liver changes kept the jaundice up after operation, and thus the biopsy helped towards a more accurate prognosis. Dr. J. Dierick (Louvain) considered that the only reliable liver function test depended upon a measure of the glycogenic function. He used galactose, and measured the total and partial concentrations in the urine. This test enabled one to differentiate jaundice due to obstruction of the bile ducts from that due to hepatic cellular disease. Dr. R. Gilbert (Geneva) suggested the possible value of tetraiodophenolphthalein as a liver function test.

ANDREW BALFOUR MEMORIAL

UNVEILING BY THE EARL OF ATHLONE

A tablet in the entrance hall of the London School of Hygiene and Tropical Medicine to the memory of Sir Andrew Balfour, the first director of the school, was unveiled by the Earl of Athlone, Chancellor of the University of London, in the presence of a distinguished gathering, on October 6th. The tablet, by Mr. Allan Howes, who has already carried out work in the school, is of Roman stone, with a bronze portrait head in bas-relief. The inscription runs:

A TRIBUTE OF GRATITUDE AND AFFECTION
TO
ANDREW BALFOUR
K.C.M.G., C.B., M.D., LL.D., F.R.C.P.
1873–1931
IN MEMORY OF HIS DEVOTION TO THE
CAUSE OF TROPICAL HYGIENE AND OF
HIS SELF-SACRIFICING LABOURS AS
DIRECTOR OF THIS SCHOOL
"THROUGH THE BATTLE, THROUGH DEFEAT,
MOVING YET, AND NEVER STOPPING,
PIONEERS! O PIONEERS!"

Sir HOLBURT WARING, on behalf of the Court of Governors and the Board of Management, in inviting the Chancellor to perform the ceremony, explained the origin of the memorial. The school council originally set up a small committee, to which were added a number of friends of Sir Andrew Balfour outside the school staff. It was decided to open a memorial fund with the object of erecting the tablet and of providing means to enable students, preferably from over-seas, to pursue courses of study at the school. The total subscribed to date was £1,200, and a promise of a bequest of £1,000 had been received. He read a letter from Sir James Crichton-Browne, a kinsman of Sir Andrew, in which he wrote of him as one "who combined the finest traits of the Scottish character with world-wide sympathies and breadth of view, and added to intellectual grasp a singular capacity for friendship."

The EARL OF ATHLONE said that there must be sorrow in all their hearts that it was to the memory of Balfour that they were paying tribute, and not to the living man, but at least they could recollect, with pride and satisfaction, that he saw this, the last piece of work to which he put his hand, brought to fruition, through seven years of unremitting zeal, untiring energy, and an enthusiasm—nay, a passion—for the successful accomplishment of his task. Andrew Balfour was "a man of a thousand endearing qualities, and for every such quality he drew to himself a thousand friends." He reminded the gathering of the outstanding events in his career, his choice of public health as his lifework, his service in the typhoid camp at Pretoria during the South African war, his appointment as director of the Wellcome Tropical Research Laboratories at Khartum, his transformation of the insanitary Khalifa into a model town from the precincts of which malaria was banished, his service during the great war in France, Salonika, Egypt, and East Africa, his membership of important expert committees and service as adviser to colonial administrations during the post-war era, and finally, the last of his labours, the building, equipment, and organization of the London School of Hygiene and Tropical Medicine, where the memory of his inspiring personality was still so vivid. Balfour, said the Earl of Athlone, was not only a great worker, but a great sportsman; he was also the author of novels of no mean order, and a lecturer of great acceptance. "Finally, and in a word, Balfour was a great empire builder. And when I say this I am thinking not so much of his devotion to work, of his vast knowledge and contributions to the subject of Empire health, not of his academic distinctions, not of his contributions to sport and literature, but of his fine character. He was without guile, honest to the core, a man who evoked in his colleagues a spirit of love and sacrifice." In one of his lectures he had said that what the native meant by a sahib was not necessarily a person of means and position and birth, but one of nature's gentlemen. By that test Andrew Balfour was indeed a sahib. Character counted above all things, and upon it the Empire rested.

Professor W. W. JAMESON, who received the memorial in the absence of Sir Austen Chamberlain, said that others could testify to Sir Andrew's work and achievements in many parts of the Empire, but only a member of the staff of the school could speak of his self-sacrificing devotion to the interests of that great institution, and of the deep affection in which he was held by every one of them.

Among those supporting the Chancellor on the dais were Sir George Newman, Sir Walter Fletcher, Sir David Munro, and Sir Henry Wellcome, and immediately in front were the professors and teachers attached to the school, and members of Sir Andrew Balfour's family.

Construction is expected to be begun shortly at McGill University, Montreal, of a neurological institute containing public, private, and semi-private wards, an operating suite, *x*-ray equipment, animal rooms, and laboratory space for carrying on pathological and histological work. This magnificent addition to the medical facilities at McGill University is made possible by the grant of $1,232,652 from the Rockefeller foundation, whilst support is expected from the Province of Quebec, the City of Montreal, and numerous private citizens. Dr. Wilder G. Penfield, at present in charge of the Department of Neurology and Neurosurgery at the University, will be Director of the Institute. He will be assisted by Dr. Colin Russel, Dr. F. K. MacKay, and Dr. W. V. Cone, as well as by a staff of assistants and graduate research students from all parts of the world.

British Medical Journal

SATURDAY, OCTOBER 15th, 1932

DIET AND THYROID FUNCTION

Colonel Robert McCarrison, in his carefully prepared statistical study *The Life Line of the Thyroid Gland*,[1] pursues two separate themes. One is the all-important subject of diet and dietetic deficiency in its repercussions upon the function of the body. The other is the aetiology of, and predisposition to, goitre. Thus the memoir will become a book of reference for all students, both of dietetics and of the thyroid gland. Colonel McCarrison introduces a scientific standard of measurement for the size of the gland, and, by inference, a standard of measurement for the probable state of its functional activity at any given period in the life of the experimental animal. The first striking fact that comes out in applying this standard is that both the environment and the constitution of the individual contribute to the form of the life-line of the thyroid gland. Rigid standardization of the condition of stock animals used in experimental work has already been recognized as imperative, but it is not yet sufficiently realized that standardization of the past as well as of the present diet and hygiene of the stock itself is equally essential.

It has long been recognized by some authorities that the size of the thyroid varies from individual to individual and from time to time in any one individual. McCarrison's work puts this *opinion* into the category of scientific *fact*. Fluctuation in the size of the thyroid he shows to be of two kinds: one a continuous variation throughout life, and the other a phase variation appearing at specific periods of life and under specific physiological strain. Day-to-day variations are to be anticipated, since the thyroid gland is a "storehouse" for its specific thyroid products, as the liver is for glycogen. This storehouse is called upon as the need arises. The critical phase-fluctuation in the quantity of material in store is related both to sexual puberty and to the establishment of maximum growth. These two conditions are not usually linked together, but this study demonstrates that they must have more than a mere casual association. The variability in the amount of stored material in the gland is more pronounced in the female, where pregnancy and lactation supervene, but it is also present in the sexually active male animal. Segregation of the sexually active animals, both male and female, materially reduces the fluctuations in the size of the gland. Hence the sexual activity of the animal is clearly written on the life-line of the gland, but superimposed, as it were, upon the influence of statural growth. The relation of the thyroid gland to genital function has long been recognized from the peculiar incidence of the pathological conditions of the gland in the two sexes. That sex which is subject to the greater variations and vicissitudes of function is more prone to thyroid disease. The knowledge that this is but an exaggeration of the normal incidence of variation will be of great value in the study of the physiology of the gland.

Colonel McCarrison has long been recognized as a pioneer and authority on dietetic deficiency diseases. This memoir will extend that reputation and place all students of dietetics in his debt. The thyroid gland would seem, of all organs, the best "indicator" of deficiency factors in any diet. Nor is this a surprising conclusion, for it is recognized that one of the thyroid secretions presides over certain oxidative processes of the body. These are not the oxidative processes essential to energy requirements, but those associated with growth and differentiation in the body. They are the oxidative processes determining constitution and diathesis. Hence the thyroid gland is the best indication of dietetic deficiencies. McCarrison's procedure and the standards he has now established and made available for general use merit adoption. Where a food deficiency interrupts the normal process of growth, a goitre is liable to appear. In any organ which is essentially a storehouse for unused material it is to be realized that a decline in the general functional activity, as distinguished from energy activity of the body, will lead to an increase in the amount of stored material. In the thyroid gland, apparently, this can occur in the face of both iodine excess and iodine deficiency in the diet. The question is evidently one of a functional and not merely a chemical change. Nor is this goitrogenic action merely a quantitative one, for two types of excessive storage appear associated with two types of deficiency diets. Diets deficient in fat seem to lead to the storage of a colloid very deficient in iodine; or, to express it otherwise, to the storage of a very dilute iodine without reduction of the total iodine stored. Scorbutic diets, on the other hand, give rise to a gland which yields a high concentration of iodine as well as a high total iodine store. Thus McCarrison's thyroid "indicator" is both of quantitative and of qualitative value. From the above observations the fact emerges that there are at least two possible variables in the material stored in the follicles of the gland: the iodine on the one hand and the colloid on the other. Each of these substances may vary independently of the other. This again is an important addition of fact to our knowledge of the physiology of the thyroid gland.

As a contribution to the problem of the aetiology of goitre, this memoir presents us with proof that the "iodine hypothesis" which seeks to explain all thyroid function cannot be sustained. That iodine plays a part in the function of the gland is clear; but that variations in the excursion of iodine cover the whole problem of thyroid gland function cannot be

[1] *The Life Line of the Thyroid Gland: A Contribution to the Study of Goitre.* By Colonel R. McCarrison, C.I.E., M.D., D.Sc., LL.D., F.R.C.P., I.M.S., and K. B. Madhava, M.A., A.I.A. Indian Medical Research Memoirs, No. 23. Supplementary Series to the *Indian Journal of Medical Research*. Calcutta: Thacker, Spink and Co., Ltd. 1932. (Rs.12.12, or 19s.)

sustained. So is it also with the aetiology of goitre: iodine deficiency in the environment may contribute to the incidence of goitre, but it is not the *cause* of goitre. Indeed, from this survey we may deduce that the environmental deficiency in iodine and the individual deficiency in iodine are the common result of some undiscovered factor affecting both the individual and the environment alike in this respect. McCarrison has in this memoir proved his points. He has now fully justified his earlier pronouncements concerning the aetiology of goitre, and has provided the student of dietetics with the most valuable basic method and procedure for experimental work. This is a fitting summation of a lifetime directed to patient and accurate investigation of the all-important subject of thyroid function.

SPECIAL LIBRARIES AND INFORMATION BUREAUX

In medicine, as in other branches of science to-day, one of the most serious problems confronting the worker is that of keeping abreast of accumulating knowledge. Failure in this respect means waste of time, energy, and money that can ill be spared. It hampers pursuit of fresh knowledge ; it contributes materially to the lag between the attainment of knowledge and its application, whether in prevention or treatment ; and it enhances the difficulty of recasting the medical curriculum, undergraduate or post-graduate. Unfortunately, the means for success are at present not available. Even where the appropriate methods of attack are generally agreed upon the necessary funds remain to be found. It is no one's business to deal with the problem in a systematic and comprehensive manner, and the community suffers in consequence. In this connexion Professor Gunn suggested, in the address published in our issue of August 27th (p. 389), a scheme for handling the literature of pharmacology and therapeutics alone which would involve both governmental action and international co-operation.

At Oxford last month Sir Charles Sherrington, in his introductory address as president-elect of the Association of Special Libraries and Information Bureaux, spoke of an estimated increase in the annual output of papers on physiology of from 3,500 in 1905 to 18,000 five years ago, and emphasized the magnitude of a problem of which such examples are afforded by single specialties. His comments on the prohibitive increase in the price of German scientific periodicals and the importance of keeping track of the growing volume of contributions to medical science made by Italy, Japan, China, and Latin America were timely ; and both those responsible for directing the policy of medical libraries and those whose personal efficiency depends in part upon access to adequate library services will do well to ponder his remarks on the need for weighing the relative merits of the older and the newer periodical literature, and still more his cogent appeal for co-operation between institutions as the only economically practicable means of securing a comprehensive and efficient service. The problem of devising and maintaining adequate informational services and making them reasonably accessible to the individual is indeed essentially one of co-operation ; and it is well, as Sir Charles Sherrington pointed out, that there exists in the Association of Special Libraries and Information Bureaux an organization whose primary objects include the provision of channels for such co-operation. This body, known to its friends as Aslib, aims at securing a more general appreciation of the need for systematic record and distribution of information in all branches of knowledge. It seeks by every appropriate means to advance the technique of the several types of service required, including, of course, the specialist library, and it tries to bring home to those in need of information outside the limits of their own special work the possibility of obtaining at least some part of it through existing channels. In this capacity it acts as a clearing-house to which the individual may appeal, not for particular items of information, but for guidance to the best sources for obtaining such information as he may require. Its annual conferences give those interested in such services as these, in whatever field of work they may be engaged, an opportunity of gaining fresh light upon individual difficulties from the common experience.

The technical part of the programme of such a conference naturally offers little of a specifically medical interest ; but it is obvious enough that the medical worker has a vital, if indirect, interest in the elucidation of such problems as the best method of constructing classified subject indexes to periodical volumes, the perfecting of specialist dictionaries, the abstracting of foreign scientific literature and the place of the library and the librarian in research. The papers at the evening sessions, designed to illustrate the wider significance of the utilization of exact information in different fields of human activity, reached this year an exceptionally high standard. They included a brilliant and stimulating address by Professor J. L. Myers on " Science and the humanities: the use and abuse of information," a characteristic illumination of " The history and sources of official vital statistics," by Professor Major Greenwood, and a lucid exposition on the subject of " International financial relations and the world depression," in which Mr. Pethick-Lawrence distinguished between essential facts and the political theories which too often obscure them. The *Transactions* of the conference will form a worthy addition to the series of reports already published by Aslib. That there is much useful work awaiting the association we are convinced ; but its activities are necessarily limited by the number of its members, and unfortunately it has not hitherto received the full measure of support which it deserves. We are glad to recall that the British Medical Association has taken a direct interest in the growth and work of Aslib since its inception eight years ago, and has from the start been represented on the council by its Intelligence Officer.

CANCER RESEARCH

The tenth scientific report of the Imperial Cancer Research Fund is published to-day. Nine papers of great scientific and practical interest, by Drs. Cramer, Ludford, Crabtree, and Foulds, are introduced in a prefatory note by the director, Dr. I. A. Murray, F.R.S., who stresses the fact that special endeavours have been made to study the art of compression so far as is compatible with clearness. In this the writers have been eminently successful. The main subject dealt with in the report is the action of radiations upon malignant and other tissues. This is taken up from the chemical aspect by Dr. Crabtree, from the histological aspect by Dr. Ludford, and from the therapeutic aspect by Dr. Cramer. Important papers bearing on the question of treatment of new growths by dye-stuffs and colloids are contributed by Drs. Ludford and Foulds. The whole report is an extremely valuable and interesting document, and is, moreover, illustrated by a series of excellent plates, many of which are in colour. A full notice will appear in the *British Medical Journal* of October 22nd.

THE WREN TERCENTENARY

Sir Christopher Wren was born at East Knoyle, near the Somerset border of Wiltshire, on October 20th, 1632, and the three-hundredth anniversary of his birth will be celebrated by a special service in St. Paul's Cathedral on Thursday, October 20th, at 4 p.m. The Dean and Chapter have also arranged a commemorative exhibition of portraits, relics, etc., in the trophy room of the Cathedral, which was opened by Sir F. Gowland Hopkins, P.R.S., on October 10th. Wren came of a learned and talented stock. At Westminster he was contemporary with John Locke, a boy just two months his senior, and at the age of 16 he entered Wadham College, Oxford. In his second year at Oxford his abilities attracted the notice of Dr. (afterwards Sir) Charles Scarborough, who was then lecturing in anatomy. Young Wren assisted Scarborough as demonstrator in his anatomical lectures, and used his mathematical knowledge, already remarkable, in studying the mechanism of muscular action. Later he composed a treatise on the motion of the muscles; his pasteboard models explaining the anatomy were given to Scarborough for use at the latter's celebrated lectures at Surgeons' Hall, but were lost in the great fire of London. Wren assisted Thomas Willis, too, in his anatomical dissections and demonstrations, and drew the illustrations for Willis's *Cerebri Anatome*. Thomas Sprat, the historian of the Royal Society, refers to Wren as "the first author of the noble anatomical experiment of injecting liquors into the veins of animals . . . by this operation divers creatures were immediately purged, vomited, intoxicated, killed, or revived according to the quality of the liquor injected." Wren himself did no more than suggest the possibility of direct blood transfusion. Richard Lower witnessed these experiments of injecting drugs into animals' veins, and joined in discussions on the practicability of blood transfusion; it was left to him to devise a technique and put into practice Wren's suggestion. In 1667, though by now busily engaged in architectural work, Wren wrote a letter to Scarborough recounting some of his observations in anatomy and experimental medicine. The inventions and apparatus of this "prodigy of learning" cover nearly as wide a field as those of Leonardo da Vinci himself. To name only three: he constructed a model of the eye, as large as a tennis ball, with the humours truly and dioptrically made; found a new way to grind glasses; and was the first to draw pictures of objects observed by microscopical glasses. Wren's inaugural address before the Royal Society manifested his abiding enthusiasm for scientific medicine. In this he paid due tribute to Harvey's work and outlined some of the subjects, medical and other, which might properly be investigated by the Royal Society. But though Wren still watched the progress of natural science, his own labours henceforth lay in the field of architecture. How much medicine owes to the inventive genius of this great Englishmen can only be conjectured. He died in his ninety-first year, on February 25th, 1723.

TUBERCULOSIS IN CHILDREN

The Medical Research Council issues this week an important monograph[1] on tuberculous disease in children, its pathology and bacteriology, by Dr. John W. S. Blacklock, lecturer on the pathology of diseases of infancy and childhood in the University of Glasgow, and pathologist to the Royal Hospital for Sick Children, Glasgow. The main source of the material for his study was a series of 1,800 consecutive post-mortem examinations in that hospital between March, 1924, and November, 1931. In this series of investigations applied to infants and young children dying from illness of any kind, or as the result of accident, search was made for any evidence of tuberculous disease, the diagnostic criteria being the same throughout. Of the whole series, 283 showed naked-eye evidence of tuberculous infection. Out of 216 cases with definite tuberculous damage the infective organisms were isolated and typed in 183. In addition to this work, bacilli were isolated and typed in 52 out of 65 specimens of tuberculous lesions sent for examination from the surgical wards. The findings that emerge from these examinations are briefly as follows: Of the 283 children with tuberculous damage, over 90 per cent. died as the result of the infection. The site of the primary damage was most often found in the chest (61.1 per cent.), next in the abdomen (35.7 per cent.), and least in the cervical glands (2.1 per cent.). Dr. Blacklock supplies new evidence of the paths by which infection comes, which should be valuable for the guidance both of the clinician and of the medical administrator. In every possible instance the evidence based on study of the primary lesion is correlated with the results of ascertaining which type of tubercle bacillus, whether bovine or human in origin, is the parasitic agent concerned. His researches lead him to conclude that the pathway of infection to lung and lymphatic glands is the air. Wherever a primary lung lesion was found, only bacilli of human type were obtained, either from the lesion itself or from the glands in direct relation to it. From this it follows that all the children who died from tuberculosis and showed this primary lesion died by direct infection of the lungs through the air passages by bacilli derived from other human beings. In contrast with pulmonary tuberculosis, the primary abdominal infections have been mainly due to the bovine bacillus.

[1] Medical Research Council. Special Report Series, No. 172. H.M. Stationery Office. 1932. (3s. net.)

The greatest number of primary abdominal lesions were found in the second year of life—that is, at the period when children are consuming large amounts of raw cow's milk. The high incidence of the bovine type of infection in the abdominal cases is doubtless due to the ingestion of infected milk. Dr. Blacklock's results confirm those of earlier pioneer workers in Edinburgh, and show that, though the incidence of infection by human bacilli is always higher than by bovine bacilli, bovine tuberculous disease, for some reason unknown, is more prevalent in Scotland than in England or on the Continent.

DECIDUAL REACTION

The decidual reaction of the endometrium during pregnancy is well known. The stroma cells enlarge to form conspicuous ovoid cells, which are termed "decidual cells." The glands also hypertrophy and assume a characteristic crenated form, but the modern tendency is to limit the term "decidual reaction" to the stroma cells alone rather than to include the whole endometrium. In the uterus decidual reaction is usually restricted to the body; it is uncommon to find well-marked decidual changes in the cervix. It has been known for many years that similar reactions can be demonstrated during pregnancy in situations other than the endometrium. Good examples are the stroma of adenomyomata, the omentum, the cortex of the ovary, and the posterior surface of the uterus. In the last few years a similar reaction has been found in the wall of chocolate cysts of the ovary. Further, a comparable hypertrophy is seen in the endometrium during the late pre-menstrual stage of the menstrual cycle when the ovaries contain a mature corpus luteum. The wide distribution led gynaecologists to attribute the production of decidual cells to hormonic influence, probably arising in the corpus luteum. This view received support from the work of Schiller and of Wilfred Shaw, who showed that decidual cells can sometimes be found in the ovary in the absence of pregnancy during the late pre-menstrual phase of the cycle. The experimental work was at first contrary to this conception. Leo Loeb demonstrated in 1909 that deciduomatous tumours could be produced by mechanical stimulation of the uterus in the absence of pregnancy, but in 1928 spontaneous deciduomatous tumours were reported by Evans in the pseudo-pregnant rat, and similar growths were produced by Innes and Bellerby in 1929 by injection of alkaline extract of pituitary. Apart from Loeb's work the evidence is in favour of the view that decidual reaction is controlled by the corpus luteum, although it may be induced by way of the ovary through the administration of anterior pituitary hormone. One of the most important aspects of the phenomenon of decidual reaction is its relation to pelvic endometriosis, for, as has been pointed out by Wilfred Shaw, the distribution of ectopic decidual cells is almost identical with that of pelvic endometriosis. It is difficult to believe that there is not some relation between the two phenomena. Sampson's theory of gravitational spill is receiving vigorous criticism in America at the present time, and the tendency is to revive the serosal theory and to invoke in its aid the influence of hormonic factors from the ovary. Annie M. Hain[1] has recently described some interesting properties of the deciduomatous tumours of the rat. The incidence of the growths is not raised by administration of gonadotropic hormone, although pseudo-pregnancy is prolonged by this means. This experimental fact brings out one of the most striking difficulties in the interpretation of decidual reaction in man—namely, the extreme variation in its intensity, particularly as regards the endometrium of the uterus. It is extremely improbable that the corpus luteum hormone is the only factor responsible for the production of decidual reaction. This view is borne out by Loeb's work, and also by the peculiar selective distribution in human beings. As yet there is no clue as to what this factor may be. Further, there is no knowledge of the function of ectopic decidual cells. It is difficult to appreciate the purpose of the formation of decidual cells in the omentum during pregnancy.

[1] *Quart. Journ. Exper. Physiol.*, 1932, xxii, 65.

THIRTY-TWO YEARS OF PLAGUE

From all quarters of the compass Egypt, centre of the Old World, is connected by sea, land, and air with three big continents—for good and ill a meeting place of East and West. Its importance in the pandemic dissemination of plague cannot be over-emphasized, and, indeed, the chronicles of plague extend far into its past. It has been mentioned by Ancient Egyptians, in Holy Books, and by many historians; and though Egypt has been praised from olden times—and often—for its healthy climate, the idea persisted that the land was the very nursery of plague. Only in recent times has it been known that the real home of plague is in Central and Northern Asia, whence the big pandemic waves advance in a secular manner. The first pandemic—the "Plague of Justinian"—was said to have originated in Egypt in A.D. 542. The second, which began in Asia, ravaged Egypt and spread all over Europe, reaching its zenith in A.D. 1347—its name, the "Black Death," denotes its fatal pneumonic type. The third pandemic spread from China (Yunnan) towards the end of the nineteenth century, and unhappily still continues. In the wake of these pandemics a prolonged series of minor epidemics has occurred with much interchange of plague infection between many countries. Recently the plague in Egypt—a part of this third pandemic—has been fully and critically studied by Dr. A. W. Wakil.[1] Up to 1844 there was an almost continuous ebb and flow of bubonic plague in lower and upper Egypt. Then, whether it disappeared completely or not, the fact remains that no single author mentions plague in the country after 1853. In 1899 it was again recorded in Alexandria. Although this fifty years of quiescence marked the final closing of the old trade land routes through the Ottoman Empire—Asia Minor and Syria—and the development instead of the sea routes to India and the Far East via Suez (and also after 1845 a more efficient quarantine and sanitary service at the ports), yet former pandemics have shown the rise and fall of plague to be of a biological nature independent of, though capable of being stemmed or quickened by, concurrent happenings. Dr. Wakil shows that the plague in Egypt since 1899 was not caused by any chronic infection in Egyptian rats perpetuated from the epidemics of the eighteenth and

[1] Egyptian University. The Faculty of Medicine. Publication No. 3. *The Third Pandemic of Plague in Egypt: Historical, Statistical, and Epidemiological. Remarks on the First Thirty-two Years of its Prevalence.*

nineteenth centuries, but by a new importation by means of used sacks—probably harbouring infected rats and fleas—emanating from Bombay, where plague was epidemic, and reaching Alexandria via Suez by railway in January, 1899. In the following April the first cases (bubonic) were recognized in that city, and thence the infection spread throughout the country. In the thirty-two years there have been 19,386 reported cases with 10,272 deaths. Only 10 per cent. of the cases have been pneumonic, and the present Egyptian plague, although undoubtedly an offshoot of the great Indian epidemic, has never assumed Indian virulence and intensity. The known facts about acquired and inherited immunity to plague in rats cannot account for the comparatively thin diffusion of the epidemic in Egypt. A more valid explanation lies in the noteworthy improvement, during fifty years, in education and environment of the people, and in the activities of a vigilant and, as events have proved, competent public health service, which fortunately became possessed early in the campaign of the knowledge of the true method of transmission of the disease. An interesting point has been the continued immunity of Cairo from plague. Its prevalent species of rats and fleas is similar to that in upper Egypt, but since the middle of last century weasles have bred in large and increasing numbers in the city. They are biological enemies of the rat, and there are now comparatively few rats in Cairo.

RESEARCH IN MENTAL HOSPITALS

Part II of the Eighteenth Annual Report of the Board of Control is mainly devoted to an account of the research work carried out in mental hospitals in England and Wales during 1931.[1] Since some sixty institutions are represented in this symposium, and about half of this number have several pieces of research to their credit, it is impossible to enter into any detailed description. The occurrence of nasopharyngeal sepsis in cases of mental disorder has received attention in several hospitals, but the most comprehensive review is submitted from the Birmingham Joint Board of Research, and contains an analysis of 1,000 cases of mental disorder in which this condition was detected. It is claimed that in the majority of these cases treatment of the nasopharyngeal sepsis led to an improvement of the physical and the mental states. In the report from the West Riding Mental Hospital, Wakefield, Professor Shaw Bolton has submitted, in addition to his general laboratory report, a review of cases of asylum dysentery and allied infections. Contributions are also published from the other three West Riding mental hospitals—Wadsley, Menston, and Storthes Hall. A histological study of a series of cases of acute primary dementia in Lancashire County Mental Hospital, Rainhill, has resulted in the following conclusions: that there is no characteristic histopathology of the brain in dementia praecox; that the most constant feature of the disease is a fibrosis affecting all the solid viscera; that of all the organs, the kidney first and spleen next bear the brunt of the fibrosis, such changes being always visible microscopically. A case of adiposo-genital dystrophy occurring in a mongol is described by Dr. R. M. Stewart, medical superintendent of Leavesden Mental Hospital. The Whittingham and Winwick reports, both Lancashire County, describe numerous investigations, including a review of malaria-treated cases of general paralysis. Apparently serological improvement bears no relation to clinical improvement. The research work in progress at Gloucester County Mental Hospital on the possible relation between epilepsy and hypoglycaemia would appear to hold out promise of a better understanding of the biochemical aspects of idiopathic epilepsy, whose essential nature has so far escaped detection.

[1] Lunacy and Mental Deficiency. The Eighteenth Annual Report of the Board of Control for the Year 1931. Part II. London: H.M. Stationery Office. 1932. (3s. 6d. net.)

ALPHONSE DAUDET'S ILLNESS

Under the title an "auto-observation by a tabetic of quality" Dr. Mary Trivas devotes her Paris inaugural thesis (No. 418) to a discussion of the illness from which the celebrated French novelist Alphonse Daudet suffered during the last eighteen years of his life. Daudet's death took place in 1897, but it was not until thirty-four years later that an autobiographical account of his sufferings was published under the title of *La Doulou* (pain) on which Dr. Trivas's thesis is based. Daudet probably contracted syphilis shortly after his arrival in Paris while leading the reckless life of a student, of which such a vivid description is given in the poignant novel *Sapho*. His first symptoms of tabes occurred about 1870, when he began to suffer from profuse and painless haematemesis, and also had a painless fracture of the leg, which did not, however, interfere with his carrying out military duties in the Franco-Prussian war. At an early stage of his illness he consulted Potain, whose diagnosis wavered between tuberculosis and rheumatism, while the urinary symptoms of the onset led him to visit the eminent urologist Guyon, who found nothing more than a nervous condition of the prostate. Lightning pains first appeared in 1881, when he was 41 years of age, and continued until his death. Daudet was fortunate in conforming to the rule that no tabetic patient suffers from all the symptoms of the disease. Although he was a martyr to lightning pains and was gravely incapacitated by his motor disorders, his sight was but little affected, the visceral symptoms were almost nil, and trophic changes were confined to a generalized muscular atrophy, so that at the age of 45 he presented the appearance of a shrunken old man. The nature of the disease appeared to have been revealed to him by his friend Charcot, who treated him by the mode of suspension which was then much in vogue, but its only result was to aggravate his condition. Douching and foreign travel were also advised, but proved equally inefficacious, and the only relief obtained was that given by injections of morphine. Like most tabetics, and notably the poet Heine and the historian Augustin Thierry, Daudet preserved his mental powers intact until the end, which occurred in 1897 at the age of 57. Death took place suddenly, as is frequently the case in tabes, from bulbar involvement, and artificial respiration and faradization of the diaphragm carried out by Gilles de la Tourette and Potain failed to revive him.

The Semon Lecture for 1932, entitled "The tonsil problem," will be given by Professor Otto Kohler of Freiburg in the lecture hall of the Royal Society of Medicine, 1, Wimpole Street, W., on Thursday, November 3rd, at 5 p.m.

OPENING OF THE WINTER SESSION

KING'S COLLEGE HOSPITAL

POST-GRADUATE COURSE

The usual procedure connected with the opening of the winter session was modified this year, as the inaugural ceremony could not be held owing to the erection of the new buildings of the Medical School making necessary the demolition of the temporary building in which the ceremony had formerly taken place. In its stead an intensive post-graduate course was held on the afternoon of Saturday, October 1st, and was attended by over a hundred former students of the Medical School and local practitioners. The subjects had been chosen by those who attended the course, and were as follows: The treatment of *coli* bacilluria and pyelitis (Mr. Yates Bell); Asthma and desensitization (Dr. J. L. Livingstone); A few practical points in gynaecological cases (Mr. W. Gilliatt); Injection treatment of varicose veins (Mr. Cecil Wakeley and Mr. H. L. C. Wood); Felton's antipneumococcal serum (Dr. Douglas Firth); Electrocoagulation treatment of enlarged prostate (Mr. John Everidge); Demonstration of blood transfusion methods (Dr. H. A. Lucas).

Annual Dinner

The annual dinner of past and present members of the Medical School was held the same evening at the Connaught Rooms. The chairman was Dr. Godfrey de Bec Turtle, treasurer of the Harveian Society of London and one of the treasurers of the Royal Society of Medicine, and a former distinguished member of the school; the guests of the evening were Mr. A. D. Power, vice-chairman of the Committee of Management of King's College Hospital, and Mr. A. D. Cowburn, H.M. Coroner for South London. After the loyal toasts had been honoured the chairman, in proposing the toast of "The Medical School and the Hospital," paid a warm tribute to the late Sir Watson Cheyne. No one, he said, who had the good fortune to come in contact with Sir Watson during his active years upon the staff at King's could have failed to realize his worth. Quite apart from his brilliance as a surgeon and teacher he was exceedingly generous, kind-hearted, and sympathetic to the younger students, his dressers, and house-surgeons.

Referring to recent letters and articles in the medical journals on the defects of the medical curriculum, Dr. Turtle said that to his mind the curriculum was somewhat analogous to the Chinese war: there was no finality about either of them. "As soon as you get one part of the curriculum peacefully settled a disturbance breaks out elsewhere. Sometimes it is the earlier subjects that are under review and discussion, and sometimes what can be put in or left out of the final syllabus. In other words, medicine being progressive there can be no finality about the curriculum. I venture to think, however, that there is nothing radically wrong with the curriculum, for surely it is the end-product that counts—that is to say, the newly qualified man or woman—and for this end-product we have to thank the teaching staffs, not only of this Medical School, but of all teaching schools."

At the close of his speech the chairman, on behalf of the 315 subscribers, presented to Dr. Willoughby Lyle a piece of hand-wrought plate in commemoration of his long services extending over more than twenty years as dean of the Medical School. In thanking the donors Dr. Willoughby Lyle gave pleasing reminiscences of many King's College Hospital men, mentioning in particular Sir William Ferguson, Dr. Bentley Todd, Sir William Bowman, Lord Lister, Professor Albert Carless, and Dr. Raymond Crawfurd; and he paid special tribute to the vice-deans who had worked under him—Dr. Harold Wiltshire, Dr. J. A. Drake, and Dr. H. A. Lucas. The new Dean (Dr. Drake), in proposing a vote of thanks to the chairman for presiding, gave a short account of the work of the Medical School during the past year, the outstanding event of which was the commencement of the new buildings, which will include a new pathological museum, research department, lecture hall, and common rooms. Among the list of successes he especially mentioned that three members had been awarded Travelling Fellowships, and that the school had also obtained for the fifth occasion out of the last six awards the Murchison scholarship for clinical medicine.

MIDDLESEX HOSPITAL

ANNUAL DINNER

The annual dinner of past and present students of Middlesex Hospital Medical School was held on October 4th at the Savoy Hotel, with Mr. Eric Pearce Gould in the chair. About 250 were present. In proposing the toast of "The Hospital and Medical School," the chairman said that in the history of the hospital the past twelve months had been a period both of anxiety and of achievement. The economic crisis had not left the hospital untouched, but early in the year a number of economies had been made—economies which did not detract from the hospital's services—and the acuteness of the situation had been to some extent relieved. Indirectly the same crisis had befallen the school, but there the cloud had had a lining of pure gold, for at the first suggestion that there might be less money to devote to research, Mr. S. A. Courtauld, the chairman of the Medical School Council, had come forward with an additional benefaction of £20,000, which brought up his total contribution to the school to £100,000. The election of Mr. Webb-Johnson and Mr. Gordon-Taylor to the Council of the Royal College of Surgeons had added not only to the professional distinction of that body, but to its administrative ability. The greatest achievement of the year was a structural one. The steel framework of the remaining part of the new Middlesex was now in position. Money for that and for most of the encasement was in hand, but more would be required before the interior could be completed, and steps were being taken in the course of the next few days to let the public know what had been accomplished and to appeal for further help. The Medical School, Mr. Pearce Gould added, would attain its centenary two years hence, and by that time, it was hoped, the new hospital would be completed. It has been suggested that as the public hospitals were being taken over by the County Council the present was an inopportune time for improving and extending the voluntary hospitals; but it was well to reflect that the standard by which all hospitals were judged as regards kindness, skill, and comfort was the standard set by the voluntary hospitals, and any lowering of that standard at the present juncture must react adversely upon all hospitals in London. If one took a wider view of the function of such a hospital as the Middlesex and saw in it a centre of education and research as well as a place where patients were treated, it would be felt that there must be freedom to develop along individual lines and to select a specialist staff as altering needs required, and also the admission of patients whose claim on the hospital was the nature of their complaint and not the district in which they happened to reside.

Mr. S. A. Courtauld, in replying to the toast, said it was very satisfactory to know that the number of entries to the school in the past year had been greatly in excess of those of any other year since the war. There were signs that better times were coming, and that the financial storm was being weathered, and he believed that hospital and school would go on increasing in their importance to medical science and education for many years to come. Dr. T. Izod Bennett, dean of the school, and Mr. H. W. Salmon, senior Broderip scholar, also replied, the dean

cordially thanking his colleagues and the heads of departments for their close co-operation in the very unpleasant task of introducing economies and at the same time avoiding any derangement of the research work of the school.

Mr. A. E. Webb-Johnson, honorary treasurer of the school, proposed the health of the guests, and made a grateful reference to many benefactors, in particular to Major the Hon. J. J. Astor, M.P., who, he said, had taken a deep interest in the scientific side of the work of the hospital. At a time when it was of vital importance for the school to secure endowments for the development of its scientific departments, Major Astor had come generously to their aid. The chair of physiology had an endowment which was now worth over £32,000, and he now had permission to reveal that the anonymous giver of that endowment twelve years ago was Major Astor himself. (Applause.) Application would at once be made to the University of London to have the professorship called after him, so that the name of John Astor would for all time be linked with Middlesex Hospital and its medical school. Major Astor made a brief response, and the health of the chairman was toasted on the proposition of Dr. G. E. S. Ward.

ST. THOMAS'S HOSPITAL

OLD STUDENTS' DINNER

The St. Thomas's old students' dinner was held on Friday, October 7th, at the Dorchester Hotel, Park Lane, with Major-General Sir Guise Guise-Moores in the chair. In order to give opportunity for conversation and meeting afterwards, the toast list was a short one, speeches being correspondingly brief and acceptable. The Chairman's toast of "The Hospital and the Medical School" was replied to by Sir Arthur Stanley, the treasurer, who reported on the progress which had been made towards the establishment of the new out-patient department. Ten years ago they had had a nucleus of £10,000; further gifts of money and investments in local loans had now produced a sum of £50,000, which was sufficient to pay for the whole of the work of reconstruction. After touching on the beer consumption in the hospital in modern times, the speaker discussed the situation existing in the sixteenth century. At that time every patient was allowed a quart of beer a day, and three pints during hot weather. Consumption on this scale nowadays would result in a yearly bill to the hospital of £12,500. Professor Parsons's recently published researches into the history of the hospital seemed to have proved that St. Thomas's was older than Bart's—when Rahere founded his priory and hospital, rebuilding of St. Thomas's had already begun. The speaker then recalled some of the more entertaining details of hospital administration in early days. In 1551 there were appointed two ministers and two sisters "to attend to the poor when necessary and convenient"—always, as he pointed out, necessary, and seldom convenient. In addition to the "expert surgeon to cure diseases" there had also to be an "honest, sober, and pious man" to manage the hospital finance. This, said Sir Arthur, amidst laughter and applause, was obviously how the post of treasurer arose. Dr. H. Gardiner-Hill, sub-dean of the Medical School, also replied to the toast, explaining that he was taking the place of Professor Dudgeon, who had succumbed to the effects of overwork and was ill. The first intimation that the speaker had had of his duties that night was the receipt of a telegram while he was on holiday at St. Andrews. Passing from the subject of golf—and incidentally mumps—Dr. Gardiner-Hill gave a short review of the year. It had been a satisfactory one from the point of view of the quantity and quality of the students. Everyone was sorry to say good-bye to Professor Maclean, Mr. H. J. Marriage, and Dr. S. E. Dore, who were retiring. Congratulations were offered to Drs. O. L. V. De Wesselow and J. St. C. Elkington on their new appointments, to Messrs. D. F. A. Neilson and W. A. Mill, assistant surgeons to the throat department, and to Dr. G. B. Dowling, who had taken Dr. Dore's place in the skin department. Amongst other distinctions the speaker mentioned Sir E. Farquhar Buzzard's appointment as physician-in-ordinary, Dr. M. A. Cassidy's as physician-extraordinary, and Mr. P. H. Mitchiner's as honorary surgeon to the King. Sir Charles Ballance had been awarded the Lister gold medal, and Sir Percy Sargent had become vice-president of the Royal College of Surgeons. St. Thomas's men who had died during the year included Dr. Harold Low, Mr. J. F. Cunningham, Sir R. Fox Symons, and Colonel E. C. Freeman, Master of the Society of Apothecaries. Outstanding athletic successes had occurred during the year: the hospital had won the boxing and three rowing events, the sports shield, the tennis and the golf. In connexion with this Mr. A. C. Hudson was to be thanked for his magnificent gift to the amalgamated clubs of two squash-rackets courts. Dr. Gardiner-Hill then proposed the toast of "The Chairman," the first Regular Army officer to occupy that position. In reply, Sir Guise Guise-Moores said he was fully conscious of the honour conferred on him; Army medical officers from a large hospital like St. Thomas's were few and far between, and he hoped to see more of them in future. The hospital had done great service during the war, and the work of Sir George Makins and others at that time could never be forgotten. Among the guests present were Lord Riddell, Sir Holburt Waring, and the deans of Bart's and Guy's.

DURHAM UNIVERSITY COLLEGE OF MEDICINE

OPENING CEREMONY AT NEWCASTLE

Lord Londonderry, who is Secretary of State for Air and Chancellor of the University of Durham, opened the winter session at the College of Medicine, Newcastle-upon-Tyne, on October 6th, by delivering an address on flying problems, with special reference to their medical aspects.

He remarked that progress in the many fields of medicine had been developing so fast that its study was becoming increasingly difficult. The various specialties were introducing new complications of undeniably practical significance. For example, in the case of aeronautics medical science had now to find answers to many questions such as the following. What could be done to enable a pilot to fly at a height of about 46,000 feet, in view of the facts that at that altitude the pressure under which oxygen was supplied to the body was only one-seventh of that at ground level, and that the temperature was 56° below freezing point? What was the limit of acceleration that a man could endure when turning a corner at high speed, where the centrifugal force tended to cause loss of consciousness owing to cerebral anaemia? What were the special mental attributes involved in man's adaptation to air locomotion in a highly complicated machine? The study of normality was obviously here as important as the study of disease, and was receiving special attention in the Royal Air Force. The medical tests of physical efficiency laid down for the Force were receiving more recognition by the medical profession generally as time went on, but there was still room for a vast amount of fascinating research by the medical officer. The reactions of the body to the various stresses imposed—such as flying at great altitudes with and without oxygen, high-speed flying, and intensive acrobatics with the modern high-speed machine—required as much careful investigation as did the reactions of the body to disease. It was therefore to be hoped that the prospects open to medical officers in the Air Force would be carefully considered by students after graduation.

Referring to the possibility of new premises for the College of Medicine, Lord Londonderry said that an increase in accommodation was becoming urgently necessary. In addition to the 314 full-time undergraduate students there were seventy-nine post-graduates, many

in active medical practice and working for higher degrees or diplomas. The number of students was steadily rising, and pressing difficulties were now being encountered with regard to laboratory facilities. He hoped that in the near future it would be possible to proceed with a scheme for erecting new buildings on a site which had been acquired near the Royal Victoria Infirmary.

Sir Thomas Oliver, who presided at the opening ceremony, commented on the many great recent discoveries in the fields of physics and chemistry. There were few sciences, however, which could claim more advances than medicine and surgery, and none which had done more for the saving of life. It was a curious fact that the wars of the last hundred years had afforded special opportunities for the progress of medical skill, and the acquiring of new knowledge in many directions. The public health services also had done much to improve the health and increase the longevity of humanity, while industrial medicine had played its own special part in making the lives of the workers more healthy, and in enabling them to acquire a more cheerful outlook upon life than had been possible in the earlier years of this century.

ROYAL DENTAL HOSPITAL

ANNUAL PRIZE GIVING

The annual conversazione and presentation of prizes in connexion with the School of Dental Surgery attached to the Royal Dental Hospital of London, Leicester Square, was held on October 3rd. Occasion was taken to open the new orthodontic department, and exhibitions were given in the histology, research, *x*-ray, and electrotherapeutic departments. After the dean (Mr. H. Stobie) had reported on the year's work, the scholarships, prizes, and certificates were presented by Lord Riddell.

In the course of an address lighted up by his characteristic humour, Lord Riddell spoke on the need for public instruction in dental health. The majority of the public, he said, took very little interest in the preservation of their teeth. Perhaps it was not surprising that the hygienic point of view was overlooked, but it was strange that a large section of the community failed to appreciate the aesthetic advantages. Much was heard about campaigns for the prevention and cure of cancer, tuberculosis, and diabetes, but very little about the benefits that would be conferred on the community by increased dental attention. Dentistry, considering its vital importance, did not hold its proper place in public estimation. The school medical service certainly provided dental treatment for children from five to fourteen, but apparently it was only possible each year to examine about half the children attending elementary schools, and to treat two-thirds of the inspected children requiring dental treatment. To provide a complete school dental service more than 2,000 whole-time dentists would be necessary. The most glaring defect in the public dental scheme was that, except in the case of scholarship students in secondary schools, there was no provision for attending to the teeth of young persons between fourteen and eighteen—a most critical dental period—with the consequence that much school dental work was wasted. At the age of eighteen the national health insurance scheme began to operate. It contained no provision for dental treatment, but certain approved societies having surplus funds supplied their members with treatment as an additional benefit. The annual sum available—about £2,000,000—was hopelessly inadequate, and as a result much of the work done was unsatisfactory, particularly the dentures supplied, both as to fit and appearance.

Lord Riddell pleaded for more and better publicity, in the shape of arresting articles in the Press, and the institution of an annual "tooth day" in each borough, with special addresses to school-children and workers—in a word, a day on which the whole community should be made to think and talk about their teeth. He believed that the Rotary Clubs throughout the country might be induced to father and organize this part of the movement, but it would be necessary to convince them of its importance. Of course, it was essential to continue to urge the local authorities to make their school and ante-natal services more efficient and the approved societies to provide their members with better dental attention. The Dental Board carried on a certain amount of useful propaganda, but more active steps should be taken to arouse public interest.

MEDICAL DEFENCE UNION

ANNUAL GENERAL MEETING

The forty-fourth annual general meeting of the Medical Defence Union was held at its London offices, Bedford Square, on September 29th, with the president of the Union, Dr. W. S. A. Griffith, in the chair.

The president, in moving the adoption of the annual report, said that with the exception of its first troublous years the history of the Union had been one of continuous progress in membership, efficiency, and financial stability. During the last few years the additional benefits accorded to members included an increase of the indemnity insurance to unlimited cover in respect of damages or costs on the other side, a reciprocal arrangement whereby the Union would defend a member in an action brought against him arising out of the acts or omissions of an assistant who was a member of the sister society (the London and Counties Medical Protection Society), and an engagement to defend a member in an action brought against him owing to something done or left undone by a temporary locumtenent or a subordinate medical officer, whether a member of a defence society or not, and, subject to certain provisos, by a non-medical assistant or subordinate. Dr. Griffith went on to say that during the last twelve months it had been necessary to defend an unusually large number of actions in the High Court, but only in one case was a verdict given against the member (a case turning upon the surgeon's personal responsibility for dressings or instruments used in an operation, and in which a material witness for the defence could not be produced). Moreover, in numerous cases in which allegations of negligence were made against members in county courts as a reason for not paying professional accounts, the action of the Union had been uniformly successful. He emphasized the necessity for communicating with the Union without delay when complaints were made, and the danger of prejudicing cases by unwise action taken before such consultation was made.

The retiring members of council (Sir Hamilton Ballance, Mr. F. C. Larkin, and Mr. E. Lewis Lilley) were re-elected. The proceedings closed with a hearty vote of thanks to the president and council, moved by Dr. L. A. Parry and seconded by Dr. Percy Smith.

THE YEAR'S WORK

In the annual report, which was adopted unanimously by the meeting, it was stated that the number of new members elected during the year had been 924, and that the total membership stood at just over 17,000, about one-tenth of whom were women. During the year 1,593 cases were dealt with by the Union, and illustrations of many of these appeared in the report. Special mention was made of the proceedings (reported in these columns at the time) taken in the Marylebone Police Court against a bonesetter and osteopath who had styled himself "osteopathic physician and surgeon." The summons was dismissed by the magistrate, but the Union took the case to the High Court, which referred it back to the magistrate with direction to convict. This decision is regarded as of great significance to the profession, as it has confirmed the principle laid down in the Medical Act that the terms "physician" and "surgeon" apply to qualified medical practitioners only, and must not be used by unregistered persons, even when coupled with some descriptive adjective.

Appended to the annual report was a report by the solicitors (Messrs. Hempsons), who dealt during the year with 119 cases handed over to them by the council. These were mainly actions in the courts instituted against members of the Medical Defence Union, or proceedings instituted by

members for the recovery of professional fees, to which actions a defence of negligence had been raised or a counter-claim filed. More than half the cases turned on charges of negligence. Save in very exceptional cases, the Union always advises that a medical man owes it to himself and his professional brethren not to be intimidated by an unjustifiable allegation of negligence, and that if it appears that such criticism is raised in the hope of avoiding liability for professional fees, it should be countered boldly by the commencement of proceedings. In a number of cases of dispute between members the general secretary of the Union has acted as arbitrator; in only one case has the unsuccessful party to an arbitration appealed to the court to set aside the award, which appeal was dismissed, the court intimating its agreement with the arbitrator's decision. Two cases have been dealt with during the year concerning the non-payment of fees by public authorities, and in each case a satisfactory result has followed the Union's intervention. The Union has been concerned in five cases which have come before the General Medical Council, in one of them as complainant—a case of association with an advertising concern—as a result of which the respondent's name was erased from the *Medical Register*. Comment is made on the number of frivolous complaints to Insurance Committees, but it is stated that many of these are disposed of summarily, and in the main any injustice done by the Medical Service Subcommittee is righted on appeal, though the Union has failed to secure a satisfactory decision in one case, which has been determined against the practitioner by the Welsh Board of Health, and can be carried no further.

The total income of the Union for 1931 was £18,357, and the expenditure £13,116.

MOTOR CARS FOR 1933

THE OLYMPIA SHOW *

[From our Motoring Correspondent]

Impressions of the cars which are being produced for the 1933 season, as given in last week's *Journal*, were, of course, based on the advance information sent out by the different manufacturers. They are, however, fully borne out by an inspection of the vehicles now being displayed at Olympia. As has already been indicated, the most noteworthy feature of the exhibition is the marked renewal of interest in cars with four-cylinder engines. While this has arisen as a result of the diminished income of most people owing to the world trade depression, yet, by careful attention to the details of design and construction, and by the economies resulting from mass production, it will be found that the new medium-powered "fours" provide not only ample power for modern traffic conditions, but a degree of roominess and comfort not hitherto associated with low-priced cars.

The tendency for motorists to purchase less costly cars than hitherto is strikingly illustrated by some official figures, lately issued by the Ministry of Transport, which show that of the vehicles sold during a recent month no less than 51.5 per cent. were of a tax rating not exceeding 10 horse power, this being an increase from 39 per cent. in 1931. Actually, cars paying an annual tax of £10 are now the most popular, their proportion of the total having increased from 9 to 22.3 per cent., while those of 8 horse power have fallen from 25.5 to 19.2 per cent. Another interesting item gleaned from the return in question is that nearly 90 per cent. of all the cars being sold in Great Britain are of a maximum of 16 horse power. Further evidence of an "economy" wave in the motoring world is afforded by the fact that several manufacturers hitherto mainly associated with the production of cars of relatively high horse power are for the coming season giving greatly increased attention to lower-powered, and therefore less costly, vehicles. Thus, at the Daimler Company's stand, notice is being drawn to a 15 horse-power six-cylinder car, which, listed at £450, is the lowest-priced vehicle turned out by that concern over a long period of years. The new car marks a breakaway from the usual Daimler practice in that, while the sleeve-valve engine is being retained for the larger models, the new "Fifteen" is provided with a six-cylinder engine having the ordinary form of camshaft-operated overhead valves. It embodies, however, the special transmission system of the larger Daimler cars—that is, the fluid flywheel and self-changing four-speed gear operated by a pre-selecting lever on the steering column.

* Continued from page 694.

Although not a show surprise—for its appearance was announced in July last—another interesting car is the 10 horse-power four-cylinder of the Lanchester Company, which formerly devoted itself to the exclusive production of high-power cars. A year ago this concern brought out a light 15–18 horse-power six-cylinder vehicle, and the reception accorded to it has apparently convinced the firm that there is a demand by a certain section of the motoring public for a car which, while embodying the high quality workmanship associated with its name, is able to provide this at a considerably lower cost than hitherto, both as to initial outlay and the running and maintenance expenses. The new Lanchester "Ten," which in saloon form is listed at £315, is a car that is bound to appeal to many medical men, for with a tax rating of only £10 per annum, its chassis comprises the Daimler fluid flywheel and pre-selective change-speed gear, by means of which it is possible to crawl along in crowded traffic, and even come to a halt, and yet "pick up" quietly and without jerk without any gear changing being necessary. With a wheel base of 8 ft. 6½ in., the chassis is fitted with a most roomy body, the interior of which is finished in a style fully in keeping with the dignified appearance of the outside.

Another concern which has realized that there is a growing demand for a four-cylinder car built to a quality rather than to a low-price standard is the Humber Company, which, after devoting its energies for some years past to six-cylinder vehicles, has for 1933 added a 12 horse-power "four," the saloon model of which, listed at £265, will certainly appeal to many doctors. The latest Humber practice of mounting the engine and gear-box on rubber is followed, while of the four speeds, both the third and "top" are of the silent-running variety.

Some Technical Details

So far as the details of engines are concerned the show reveals no very striking departure, except perhaps a greater preference for side valves rather than for those of the overhead type. Carburettors have been improved in design, and are being more generally provided with air cleaners, while lubricating systems have oil purifiers and coolers. As regards ignition, the coil variety, current for which is drawn from the lighting and starting accumulators, has almost entirely superseded the old and well-tried magneto, the change being probably due to lower costs than to any question of more reliable ignition. Batteries remain one of the most vulnerable points of motor vehicles, requiring constant attention if they are to be maintained in good working condition. Fortunately the various battery makers realize this, and have established service stations in the principal centres of the country, where the requisite attention to accumulators can be promptly given.

Reference has already been made to the improvement in change-speed gears, not only from the point of view of more silent running, but also for their greater ease of manipulation. The engine power transmission to the rear axle through bevel or worm gearing still reigns supreme, but for the first time for many years a car with front-wheel drive is on view, this being the B.S.A. 9 horse-power four-cylinder model. The stand of the same concern is also well worthy of inspection for its inclusion of a new B.S.A. 10 horse-power "four" saloon, which, although priced at only £240, includes in its specification the Daimler fluid flywheel and self-changing four-speed gear-box—being, in fact, the lowest-priced vehicle on the market embodying these features. Among other general tendencies which merit reference are the increasing use of bumpers, safety or unbreakable glass for windows and windscreen, and dipping and non-dazzle headlights. It may be mentioned here that the fabric body, which two or three years ago had a short wave of popularity, is now hardly to be seen, practically all motor bodies being of wood and metal construction.

A car fitting which is widely used on the Continent but is still not very frequently seen in this country is the direction indicator. At last, however, there are indications that, even if they do not, like driving mirrors, become compulsory, their use is at least becoming more general, for they are now to be found on several of the cars shown at Olympia. Among the most novel is that fitted on the Morris cars, the indicator in this case taking the form of a series of three small superposed lamps (red, yellow, and green) on each side of the front of the car—miniature replicas of the signalling apparatus used in some London streets. On the Humber vehicles, the direction indicators, instead of being located on the sides of the windscreen, where they are not always prominently seen from the rear, are placed on the central vertical pillars of the bodywork in such a way that they are hardly visible when out of use, yet, when extended, stand out well and are illuminated. While the increase in the number of direction indicators is to be welcomed, the only drawback to their use is a lack of standardization in the methods adopted, with the result that, for the present at least, motorists, if they are to fully understand the intention of the driver in front, will have to be familiar with many different types of indicator. A noteworthy feature of one or two of the new cars at the show is the provision of permanently mounted jacks. With petrol tanks and luggage carriers at the rear of most cars it is not an easy task, when wheel and tyre changing becomes necessary, to place the jack in position under the rear axle. With the Armstrong-Siddeley cars, the jacks being already in position to lift the rear wheels from the ground, it is only necessary to insert and turn the jack handle, which can be done without the motorist having to bend down. The Triumph Super Nine car is also fitted with a centralized hydraulic jacking arrangement.

Armstrong-Siddeley and Austin

Although no new models have been introduced, careful attention to detailed improvements marks the latest Armstrong-Siddeley 12, 15, and 20 horse-power cars, all of which are provided with six-cylinder engines. The appearance of the latest models is enhanced by the reduction of overall height, which has been effected by mounting the body low on the frame without impairing head room or good visibility. Indeed, a special point has been made of ensuring a commanding view from the driver's seat, while the absence of the usual gear lever—all the cars are fitted with the pre-selective change-speed gear, controlled by a small lever on the steering column—gives a maximum amount of unobstructed space in the front compartment. Efficient ventilation is secured on the coachbuilt saloons by designing the quarter lights so that they can be slid backwards a short distance, the opening thus provided allowing the air to escape without causing undesirable draughts. The engines on all the latest models are mounted on rubber and fitted with vibration dampers. Minor improvements have also resulted in obtaining increased power and quieter running at open country road speeds. The cars are also noteworthy for ease of control, for not only is the change-speed gear controlled from the steering column, but the electric horn, the headlight dip, and switch device can be operated without removing the hands from the steering wheel.

There are many interesting departures in the 1933 range of Austin cars. Early this year the company added to its productions a 10 horse-power four-cylinder model, which, by reason of its attractive design and low price—£168 for the *de luxe* saloon—quickly became very popular, and is being continued in improved form. Some noteworthy changes have also been made in the well-known Austin Seven, which is now provided with a four-speed twin-top gear-box, a rear-mounted petrol tank, wider brake drums, and more roomy bodywork. The Light Twelve-Six car has not only been improved in detail but reduced in price, the *de luxe* saloon now being listed at only £218. Following the general "economy trend," this chassis is also being supplied now as a Light Twelve-Four, having a four-cylinder engine rated at 12 horse power in place of a "six." This attractive model is available at prices varying between £168 and £198. The Austin range also includes the ever-popular Twelve-Four and the 16 and 20 horse-power six-cylinder cars which have been on the market for some years.

Hillman and Morris

The 10 horse-power "Minx" car, introduced a year ago by the Hillman Company, has proved so successful and popular that it is being continued in substantially unchanged form. The principal modifications in this company's cars are found in the "Wizard" six-cylinder vehicles, which are available with either a 15.7 or 20.9 horse-power unit at the same price. The chassis frame has been considerably strengthened, there being now no fewer than seven cross-members. As in the "Minx," the engine and gear-box are rubber-mounted, and what is known as a "traffic-top silent-third" four-speed gear-box is provided.

Apart from the illuminated direction indicator already referred to, there are many new and interesting features in the 1933 models of the increasingly popular Morris cars. They now range from the Minor 8 horse-power to an entirely new 25 horse-power six-cylinder car—the latter being the highest-powered vehicle so far produced by the Morris Company. All the old familiar models are retained at practically unchanged prices, notable modifications being that the Minors are being made in two lengths of wheel base—6 ft. 6 in. and 7 ft. 7 in., the larger one of course enabling more roomy bodies to be fitted—and that all Morris cars, except the £100 model, are now fitted with four-speed silent-third gear-boxes. Perhaps the most interesting Morris departure for 1933 is the introduction of a model which comes between the 8 horse-power Minor and the popular Cowley—which latter is now only supplied with an 11.9 horse-power engine. The new car is a four-cylinder "Ten" which, with a sunshine-roofed saloon body, is available at £169 10s., or as a coupé, with sliding head and leather upholstery, at £195. The new car has an 8-foot wheel base, so that the body work is of a roomy character. The Morris Major 14 horse-power, the Oxford 16 horse-power, and Isis six-cylinder cars are retained, and will be found thoroughly up to date in their details, the Oxford series having an entirely new design of power unit.

The galleries at Olympia are, as usual, devoted to a display of motoring accessories, the variety of which, despite the completeness with which modern cars are turned out, is so extensive that one could spend practically a whole day in this section of the exhibition. With the winter now at hand, special attention may be drawn to the many varieties of radiator muffs, cosies, garage heating lamps, and stoves. The first two keep the engine warm when driving in very cold weather, while the lamps and stoves prevent freezing up and probable bursting of radiators and engine cylinders in frosty weather, when the precaution is not taken of drawing off the cooling water before putting the car away for the night in the garage.

Next week it is intended to conclude the report of the 1932 show with a brief reference to some of the other cars displayed. Readers may be reminded that the exhibition will remain open daily from 10 a.m. to 10 p.m. until October 22nd.

C. J. W.

DANGEROUS DRUGS ACTS

AMENDMENT OF SCHEDULE

The Secretary of State for the Home Department has, under Section 7 of the Dangerous Drugs Act, 1920, made Provisional Rules, dated September 28th, 1932, amending the list of preparations in the Third Schedule to the Dangerous Drugs (Consolidation) Regulations, 1928. (Statutory Rules and Orders, 1928, No. 981.) The Rules have been made to meet the situation created by the publication of the new edition of the *British Pharmacopoeia*, which has necessitated a revision of the description of the preparations exempted from the Dangerous Drugs Regulations. The Rules also exempt mixtures of Dover's powder and certain liniments, ointments, and plasters, which have been found incapable of causing addiction, and from which, in practice, a dangerous drug cannot be recovered. A list of the preparations exempted appears in the *Supplement* at page 209.

The Secretary of State proposes, after the expiration of forty days from September 28th, to make regulations for amending the Dangerous Drugs (Consolidation) Regulations, 1928. The Regulations will be in the terms of the Provisional Rules, which, in accordance with the Provisions of Section 2 of the Rules Publication Act, 1893, will remain in force in the meantime.

Copies of the Provisional Rules can be obtained, as soon as available, through any bookseller or direct from H.M. Stationery Office at the following addresses: Adastral House, Kingsway, London, W.C.2; 120, George Street, Edinburgh; York Street, Manchester; 1, St. Andrew's Crescent, Cardiff; and 15, Donegall Street West, Belfast.

Scotland

Edinburgh Royal Infirmary Extension Appeal

In connexion with the bicentenary extension appeal of the Royal Infirmary of Edinburgh, a meeting of the General Committee was held in the City Chambers on October 6th. Lord Provost Sir Thomas B. Whitson, who presided, said that the committee met in May, 1930, and had decided to issue an appeal with the object of raising, if possible, £500,000. Last November the amount to the credit of the fund was £221,803, and now it has reached £251,000. In view of the present financial situation this was an eminently satisfactory accomplishment in a limited area in less than three years. It must be borne in mind, however, that they could not appeal to Glasgow and other large towns of Scotland, which had their own hospital problems. The money already collected was now earning interest, and as it would not be required for two or three years, it was hoped that, in one way or another, it would ultimately amount to £300,000. He had just received a letter from Mr. Thomas Cowan, LL.D., intimating a contribution of £10,000 to the fund, and he hoped that similar acts of generosity would bring it up to the sum now aimed at. £300,000 would enable the managers to erect the new maternity hospital and the accommodation for nurses. This infirmary was the largest voluntary hospital in the kingdom, and it was feared that if the extension appeal were continued in these hard times the ordinary annual subscriptions would suffer. Accordingly the Board of Managers had decided to close the fund, although, if times improved, a further appeal might be issued in the course of a year or two.

Nairn Hospital

An extension of Nairn Town and County Hospital, consisting of new maternity wards which have been erected at a cost of over £5,000, was opened on September 28th by the Earl and Countess of Leven and Melville. Mr. J. S. Robertson, chairman of the hospital, presided. Lord Leven and Melville, recalling the early history of the Nairn Hospital, said that a small building had been erected in 1846 at a cost of £900, and for sixty years this hospital had served the town and county. In 1906 the present hospital had been erected owing to a contribution of £4,000 by the late Mr. Alexander Mann, and gradually additions had been made, consisting of central heating, *x*-ray installation, etc. Now the addition of maternity wards had been made possible by the generosity of the late Mr. Andrew Morrison of Nairn, at a cost of some £5,500. The architect of the addition was Mr. Bennett Mitchell of Aberdeen.

Scottish Association of Insurance Committees

The twentieth annual conference of the Scottish Association of Insurance Committees, attended by some 200 delegates from all parts of the country, was held in Dunoon on September 30th and October 1st. Mr. John Hill, Glasgow, who presided, recalled some facts regarding the twenty years that have now elapsed since the National Health Insurance Act came into operation. When millions of insured persons went to the war, societies were relieved of a great amount of probable sickness, with the result that the first valuation in 1918 showed enormous surpluses to approved societies. During the three years of trade prosperity which followed people had not time to be ill, and claims for sickness benefit were accordingly light up to 1921, so that on a second valuation in 1923 surpluses were again excellent. A gloomier period followed with ever-increasing unemployment and loss of income to approved societies. Mr. Hill doubted if the best were being done with these surpluses in regard to extra benefits. There was a considerable amount of inequality: some approved societies had an impossible burden because their members were persons engaged in hazardous occupations; others had surplus money of which they hardly knew how to dispose. He would suggest that 50 per cent. of all surpluses be taken and used to make dental benefit statutory, and that all other extra benefits be cut out with a view to establishing what he believed was the most urgent need of the insured person—a specialist and consultant service. He believed that the present supposedly abnormal sickness experience would be the normal for many years to come.

Miss Muriel Ritson of the Department of Health for Scotland said the greatest fear for the future lay in the fact that there were indications that the sickness and disablement claims made on approved societies in Scotland were increasing. It was generally supposed that the past summer and the present year had been a healthy one, but the returns received by the Department indicated that 1932 was likely to be less favourable than 1931 and 1930. If the new National Health Insurance Act was to justify their hopes they must not relax any effort towards perfect administration, and it would be necessary for medical practitioners to probe deeply into the causes which gave rise to the heavy incidence of certification, more especially since heavy incidence appeared to be peculiar to certain practices. The morbidity statistics just published showed that research into influenza and minor respiratory diseases was urgently needed; these illnesses accounted for nearly two million days of incapacity for work in Scotland in one year, entailing an expenditure of over £230,000 from national health insurance funds alone.

A resolution was submitted and unanimously approved for the extension of medical benefit to the dependants of insured persons, and for the inclusion of such additional medical services as might be found necessary and expedient for the prevention and cure of disease. In the report of the Drug Accounts Committee it was mentioned that the cost of insulin for the past nine years had been £47,000, and it was noted that in the past year every month had shown an increase over the corresponding month of the previous year, although the price of insulin had remained stationary since January, 1930. One case was mentioned in which a patient in the course of three years had received insulin to the value of £93, liver extract to the value of £108, and other medicines to the value of £2, making a total cost of £203, this being the first recorded case in Scotland of an insured person receiving medicine at a cost of £200. Sir Henry S. Keith submitted a motion that in the opinion of the conference the law should be amended so that when maternity benefit was paid to a person receiving treatment in an institution, the benefit might be paid to the institution; the motion was carried by a large majority.

Prevention of Disease

At the concluding session Dr. E. P. Cathcart, professor of physiology in the University of Glasgow, spoke upon the prevention of disease. He referred to the ignorance of the average man in the matter of his duties to maintain his own health, and said that the three fundamental duties concerned nutrition, work, and leisure. The problem in regard to food was not inability to purchase, but inability to spend wisely the income which was available, and also lack of training in marketing and in cooking. He believed that a contributory factor to the expenditure of insurance committees was directly due to faulty nutrition. Until recently this had been an evil of the towns, but the advent of motor vans was now producing a deterioration of the standard of nutrition

in the country, and more costly and often inferior articles were replacing the sound, if less decorative, foodstuffs. As regards leisure, there was a steady demand for more leisure by the industrial worker, but it should be remembered that a change of occupation was as valuable as a complete rest. The man who, after work hours transferred his energies to an allotment, was acting on sound physiological principles, while the man who hung about watching greyhounds or waiting for the results of the day's races, although doubtless emotionally served, got a poor physiological return. In the last fifty years the general death rate had fallen from 21 to 12 per 1,000, and the infant mortality rate from 149 to 66 per 1,000 births, while the expectation of life had risen from 41 to 56 years for boys and from 44 to 60 years for girls. The attack of sanitarians in the past had been mainly directed against material things such as water supply, sanitation, and slums, but in the future the main attack must be on habits and customs. Much could be done to reduce the incidence of illness if people were periodically examined whether ill or not, and he felt sure that the great advance in medicine in future would be the earlier detection of disturbances in normal life.

Fife Medical Association

A jubilee dinner to commemorate the founding of the Fife Medical Association was held in the Royal Hotel, Cupar, on October 6th, with Dr. Orr, St. Andrews, in the chair. The toast of "The Fife Medical Association" was proposed by Dr. G. W. Miller, Dundee, who said that although all the members belonged to the British Medical Association, small local societies such as theirs fulfilled a special function, and it would be a matter for regret if they were allowed to pass out of existence or even allowed to merge with the Branches of the British Medical Association. Dr. C. E. Douglas, St. Andrews, who replied to the toast, said he was the only survivor of the nineteen doctors who, fifty years ago, as a result of discussions concerning the enmity which then existed between medical men generally, had assembled in that same hotel to form the Fife Medical Association. There had been ill-feeling everywhere, but those days were changed completely, particularly, it might be said, in Fife. Dr. Johnstone, Leven, was appointed president for the coming year, Dr. J. P. Bannerman, Cupar, secretary, and Dr. John Macdonald, Cupar, treasurer.

Central Midwives Board

In the report[1] of the Central Midwives Board for Scotland for the year ending March 31st, 1932, the number of midwives enrolled is stated to be 9,834, including 563 for the current year. Of these, 6,296 entered by examination, while 3,538 were admitted through having been in bona fide practice at the passing of the Act; the number of those actually engaged in practice is about 5,500. Four examinations are held annually, taking place simultaneously at Edinburgh, Glasgow, Dundee, and Aberdeen, and the number of candidates in the past year was 592, of whom 548 passed, the average pass marks being 64.5 per cent. There are seventeen institutions in Scotland at which midwives can be trained. During the year eight midwives were called before the Board to answer charges of malpractice, negligence, or misconduct, and as a result the names of four women were removed from the roll; in one case no further action was taken, and in the other three cases the midwives were admonished. The funds for the expenses of the Board are obtained by assessment of the local supervising authorities, and the total assessment in the past year amounted to £786.

[1] H.M. Stationery Office, 120, George Street, Edinburgh. (2d.)

CORRESPONDENCE

Acute Intestinal Obstruction

SIR,—Mr. Donovan, in the *Journal* of October 1st, expresses the view that jejunostomy is never indicated in intestinal obstruction, and says that he would very much like to hear of any case where jejunostomy *alone* has proved of value. (The italics are my own.)

If Mr. Donovan has in mind a blind enterostomy where the cause of the obstruction is unknown I am entirely in agreement with him, and such a procedure, so far as I can see, was not advocated in any of the papers published in the *Journal* of September 17th. Sir William Wheeler expresses no definite opinion for or against, and Professor Burgess condemns it. The other reference is in the concluding paragraph of Sir Henry Newland's opening address, and he indicated the real function of this operation, which is in the relief of intestinal paralysis where the mechanical obstruction has been dealt with. Jejunostomy was advocated by Mr. Sampson Handley for ileus duplex, though he suggested as a more satisfactory procedure a lateral anastomosis between the jejunum and the transverse colon—an operation which has always seemed to me to be one of greater magnitude than many of these extremely ill patients can stand.

It is for this type of case that an ileostomy under local anaesthesia is often of value. Every surgeon is familiar with the case of appendicitis operated upon at the stage of purulent and plastic peritonitis implicating coils of small intestine in the right iliac fossa and pelvis, the necessary drainage, the development four or five days later, often after removal of the tube, of colicky pain, distension, vomiting, and perhaps visible small intestine peristalsis. The proper procedure is to reopen the wound, when usually the coil of small intestine is found to be adherent and kinked; this is freed and returned. In a small proportion of cases the obstruction is not relieved, either because the coil again becomes adherent or because that portion of the bowel has become paralysed. It is in these cases that a catheter inserted into a coil higher up will often relieve tension, drain the contents, and allow the paralysed bowel to recover or a kink to straighten out. I have performed enterostomy in several cases of this type, and have also done it at the primary operation in a case of acute appendicitis, where the peritonitis was so severe that the small intestine was waterlogged and splashing. I am convinced that it has saved several patients' lives. Any possible loss of chlorides can be overcome by intravenous or subcutaneous injection, and as soon as intestinal movements are resumed drainage from the catheter practically ceases.

In only one case in which I have done the operation has the opening not closed spontaneously. The operation, in my opinion, has a distinct value as a life-saving procedure, but its indications should be clearly defined.—I am, etc.,

Leeds, Oct. 3rd. H. COLLINSON, F.R.C.S.

SIR,—Many of us must view with dismay and alarm the operative mortality figures for acute intestinal obstruction as set forth in Mr. Vick's series in your issue of September 17th (40.1 per cent., excluding strangulated herniae and intussusception). The whole profession will owe him a great debt of gratitude for bringing forward these statistics, which are a very real indictment. Mr. Vick's series, embodying as it does the results of many surgeons attached to our different teaching hospitals, though of supreme interest and importance, has given a mortality figure which everybody will admit is far too

high, and must give us all very serious food for thought. This collective mortality figure, if we are going to materially benefit, needs to be exploited further. It would be of first-rate benefit to know the mortality figures of individual surgeons, their particular views, routine methods of handling serious cases, and comments.

If, in a series of cases of acute obstruction involving the large and the small bowel, we exclude acutely strangulated herniae, either visible or invisible, and intussusceptions, the remainder, excluding volvulus and strangulation by bands, will comprise for the most part obstructions in which the blood supply of the bowel is not jeopardized. With the exception of enteroliths, and the presence of Meckel's diverticulum—both rare conditions—acute obstruction in the small bowel is almost invariably, directly or indirectly, the outcome of the presence of tuberculous glands, caseating or calcified, or both, in the root of the mesentery. The small bowel is either directly adherent to one of them at the site of obstruction or is trapped beneath a band of adherent omentum. Before the obstruction becomes absolute there is nearly always the history of previous recurring attacks of abdominal pain, colicky in nature, which have passed off with treatment. In several instances within my own experience an operation for appendicectomy has been undertaken in the mistaken belief that the appendix was the cause.

Obstructions involving the large bowel are both easily and painlessly diagnosed with a barium enema. This is not only a means of localizing the obstruction, but it often gives valuable information as to its character. Frequently I have been able to obtain the very valuable information that the obstruction is due to impacted faeces higher up in the large bowel (or diverticulitis). High enemata have given the desired result, and saved the patient unnecessary operation. Faeculent vomiting is a dangerous sign, and should be dealt with promptly. Gastric siphonage and lavage by means of a Jutte's tube is the most satisfactory means of coping with this. When vomit has become faeculent, toxic absorption from the stomach and small bowel proceeds very rapidly, and its disastrous effect upon the myocardium is soon evident. For caecal or supracaecal obstructions, or for obstructions in the colon in which the surgeon elects to perform an exploratory laparotomy, spinal block is the undoubted and safest anaesthetic of choice.

For obstruction in the colon, where toxaemia is extreme, caecostomy performed under infiltration anaesthesia, followed by 1 c.cm. of pituitrin, is the only course. The obstruction can always be dealt with later. Obstructions involving the small intestine must be relieved at the time of operation, and special care taken not to let a single distended coil of gut escape. Each coil that escapes lowers the intra-abdominal pressure, and causes a severe fall in the blood pressure. In freeing the obstructed bowel from the root of the mesentery the greatest care must be exercised in avoiding damage to the veins here, as such damage is most prone to be followed by a fatal pulmonary embolus. Obstructions of the small bowel, when relieved under spinal block anaesthesia, have frequently resulted in a natural movement before the patient leaves the theatre. I can only emphasize the importance of doing as little as possible surgically in these difficult cases. Relief of the obstruction permanently in the small bowel, and temporarily by means of a caecostomy in the case of the large bowel, is the ideal. The latter obstruction can always be dealt with later. After-treatment consists in the administration of glucose and fluids by the Jutte's tube, hypertonic saline intravenously (fluid by mouth if the Jutte's tube is not necessary), and radiant heat to the abdomen.

I can now quote from a series of over 200 cases operated upon by me in the last twelve years, in which the mortality has worked out at 15 per cent. I am convinced that the principle involved in this serious malady is: "To do as little as possible surgically, consistent with safety."—I am, etc.,

Bradford, Sept. 26th. BASIL HUGHES.

Blood Transfusion

SIR,—There has been so much discussion about the collection of blood from a vein that I hesitate to ask your indulgence. It does, however, seem to me that there is one guiding principle, and that so long as this is observed the details of the technique can be left to the individual taste of the operator. This principle appears to me to be that it is of the utmost importance that the least possible discomfort and inconvenience be caused to the donor, consistently with the efficient collection of the blood. I am supposing the donor for the moment to be a member of the London Blood Transfusion Service or an equivalent provincial organization. These donors are volunteers, and they give their services for the benefit of humanity, and ask nothing in return save that they shall not be unnecessarily mutilated or suffer undue discomfort through pain or repeated pricks with the needle. These conditions they are entitled to, and many of them have acquired considerable experience in the technique employed upon them, and are in a position to criticize that technique.

Now with regard to the size of the needle, surely the smallest needle through which the required amount of blood can be collected in reasonable time is the needle to use. Personally I employ an ordinary serum needle with Record fitting 1½ inches long and 16 B.W.G. size. This will allow 600 c.cm. of blood to flow through it in about four minutes, when negative pressure is induced in the flask with a Potain aspirating syringe.

There is another consideration regarding the obtaining of blood, and that is the amount of blood available in the vein as the withdrawal proceeds. It must be remembered that the 600 c.cm., say, of blood which one requires is more than an armful, and that a steady flow can only be obtained if enough blood is filtering through the capillaries and running back along the vein. A vein may stand out and look very good, but one may empty it in a few seconds and the blood may only drip out, and one may feel the "organ reed" vibration of the vein on the orifice of the needle as the former collapses and dilates. This lack of sufficiently rapid circulation may be avoided by placing the donor's arm in water as hot as he can conveniently bear for five minutes beforehand.

Then, regarding the point of the needle, whether it is a long bevel or a short bevel depends on the individual touch of the operator and the angle at which he is in the habit of puncturing the vein; the more oblique the puncture the shorter should be the bevel, but the shorter the bevel the less efficient is the needle as a puncturing instrument. I prefer a fairly long bevel, because the point is less broad and the cutting edges near the point are more acute, and therefore less pressure is required to introduce it, but the direction of my plunge into the vein is almost parallel to it. I agree that a short bevel needle is less likely to pierce the further wall of the vein, but for the same reason it is less likely to pierce the anterior wall and enter the lumen, and it is therefore more difficult to work with.

A word here should be said about sharpness. Many needles which look sharp to the naked eye fall far short of the ideal, and inspection with a hand lens—or, better still, inspection under the 2/3″ power of the microscope—will quickly reveal their deficiencies. Even new needles should be examined, and a few touches on a stone will make all the difference between a tolerable needle and a really good instrument.

We now come to the question of the much-debated use of the scalpel. Why on earth not make the tiny nick? A hole has to be made in the skin: make it with the best instrument for the purpose—namely, a scalpel—only do not make it larger than the needle would have made it—namely, 1/8 inch. If this nick is not made one has two layers to pierce with the needle—the skin and the vein. One may be lucky and go through both together, or one may have to make two consecutive thrusts, first through the skin and then through the vein, either by design or necessity. In any case there is a certain amount of pushing, with (1) the possible dislodgement of the vein to one or other side, which cannot always be appreciated, and which is a constant cause of failure to enter the lumen, and (2) the possible puncturing of the deeper as well as the superficial wall of the vein, owing to the sudden cessation of resistance when the skin has been passed. With regard to the opinion of the donors themselves, I have never had one offer any objection to the preliminary small nick, and all who have sufficient experience appreciate it.

The next point is the use of a local anaesthetic. Though it is not common for more than a slight degree of pain to be caused, yet the donors do feel, let us say, an unpleasant sensation, and have the anticipation of something which *may* hurt. Bearing in mind the guiding principle, surely it follows that a local anaesthetic should always be used. It has been objected that the swelling produced obscures the vein, but I venture to think that this only occurs when the injection is a deep one. Perfect local anaesthesia can be produced by one minim of 4 per cent. novocain, injected truly intradermally, so that a white bleb, no more than 1/8 inch across, is produced.

With regard to the introduction of blood into the recipient, I always employ a similar technique, except that I use the smallest needle which will allow 600 c.cm. of blood to pass in ten minutes with the pressure produced by a large scent-spray bellows—namely 18 B.W.G. I always use novocain (except during a general anaesthesia), and make the tiny nick with a scalpel. Only on rare occasions is it necessary to make an incision.

Finally, always treat both donor and recipient with the utmost consideration and their veins with the utmost respect. Many a good vein has defeated a good operator, and almost always, if he reflects afterwards, he will find that it was because of some apparently trifling yet all-important detail which he might have included in his technique.—I am, etc.,

London, W.1, Oct. 5th. RONALD G. CANTI.

Protein Shock or Protein Stimulation?

SIR,—There has recently appeared in the *International Archives of Pharmacodynamie* a paper by Dr. J. P. Modi, on the actions of milk and its components on hearts. His results give proof that milk, casein, whey, etc., are all capable of stimulating cardiac activity, and that their stimulation is on a par with that exerted by adrenaline. In addition, these substances can restore activity to hearts which have already failed, and prevent hearts from failing under conditions where controls showed that failure would have occurred.

It is suggested in this paper that the term "protein *shock* therapy" is probably a misnomer, and that the more correct term would be "protein *stimulation* therapy." The stimulating action of adrenaline, for example, is only exerted for a short time, because the body has a mechanism available for destroying this drug, whereas for milk it has not. Consequently an injection of milk could be expected not only to stimulate, but also to continue stimulating until the body has developed the machinery for destroying the stimulating intruders.

I myself obtained somewhat similar results—published in the same journal—from peptones, the classical shock-producing proteins. Strong solutions of peptones markedly depress cardiac activity; the weaker solutions are strongly stimulant, and keep hearts active under conditions where they would otherwise fail. I suggested accordingly that laboratory workers, since the lives of their patients were not of value, had grown accustomed to give those large doses which cause depression or shock, whereas the clinicians, necessarily more cautious in their dosings, had been led through this caution to give their patients those smaller doses which really stimulated.

After that came the fallacy of assuming that the effects of a large dose differ only *quantitatively* from those of some smaller one. There can be instead that *qualitative* change from something which predominantly stimulates to something which predominantly depresses. When those facts are more vividly realized the term "protein shock" will probably be restricted to the phenomena hitherto studied in the laboratory, and the term "protein stimulation" be applied to the phenomena studied at the bedside.—I am, etc.,

Lucknow. W. BURRIDGE, D.M.

Otitis Media in Sucklings

SIR,—May I endorse Mr. Leathart's remarks in the *Journal* of October 8th about the supine posture tending to cause otitis media in bottle-fed infants? I raised the point with Dr. Douglas Guthrie in the discussion at the Centenary Meeting, and he agreed as to its importance. Statistics would, of course, prove the truth of the matter, and some months ago observations were started at Stobhill Hospital; yet statistics are hardly necessary. No otologist drinks his beer or his tea on his back; no breast-fed baby is fed in this unphysiological position: but many, probably most, bottle-fed children drink supine. The Eustachian tube, so short and wide in children, is then an easy road for unclean milk. The wonder is that otitis is not more common. I also agree with Mr. Leathart that the mastoid operation on infants is easy, quick, and safe—under a local anaesthetic.—I am, etc.,

Glasgow, Oct. 8th. JAMES ADAM.

Treatment of Asthma

SIR,—In spirochaetal diseases, such as relapsing fever, yaws, and venereal diseases, one of their characteristics is a recovery, then after a time a relapse. This may go on for a long time. Asthma shows the same feature. Again, a non-specific substance, such as peptone, greatly reduces the Wassermann reaction, and causes involution of the lesions. These facts have long been apparent to me, and in 1928 I treated a young lady, aged 19, sent to me by Dr. Garrett of Leicester, with novarsenol, but as she did not seem to improve I discontinued it. Lately, bismuth intramuscularly has produced striking results, as it does in the spirochaetal diseases.

A lady, aged 53, who suffered severely from asthma for twenty-five years, and visited Mont Diné during three years, was my first patient. Beginning with peptone, I then used bismuth salts (twice), and the third time metallic bismuth. In two days she returned, declaring she had had her first day of complete relief. I continued the injections (with peptone also) for five weeks, and up to the present time she is quite well. I used the bismuth metal in a good few other cases, and the advanced cases did extremely well, although one or two of the youngest did not quite lose their asthma.

Looking for a moment at bismuth in spirochaetal diseases, it occupies Group V of Mendelieff's periodic series: arsenic, antimony, tellurium, vanadium, etc., all feebly electro-negative. In simple solution the effect of

these metals on spirochaetes or paramecia is *nil*, becoming effective only when combined with cellular extracts. The action of bismuth on the cellular extract gives rise, it is believed, to bismoxyl. Kolle showed in 1924 that if a depot of bismuth was made in the thigh of a rabbit it could not be inoculated with venereal disease so long as the depot was kept up, but if the depot was removed the animal became susceptible. Less than 1 part of bismuth in 100,000 of the moist tissue is sufficient. Thus bismuth is prophylactic, and, according to Levaditi, acts as a catalyser to the spirochaeticidal substances elaborated by the tissues, and stimulates tissue and immune reaction. In asthma there is, of course, no spirochaete to prevent, but the bismoxyl charges the reticulo-endothelial system, and it may prevent or destroy acetyl-choline, or inhibit the anaphylatoxin (secondary antigen of Oriel) and raise the immunizing power.

In venereal disease there is also the development of allergy. Harrison[1] points out that the "non-reactivity to the virus *in situ* is liable to be interrupted by a reaction which is greater in relation to the demonstrable virus than is found in the earlier stage." Thus bismoxyl removes allergy, at least for a time. The metallic bismuth produces no pain or any other reaction. Possibly tellurium, etc., do much the same, but I have not tried them.—I am, etc.,

London, W.1, Oct. 4th. A. G. Auld, M.D.

After-treatment of Suprapubic Prostatectomy

Sir,—I was much interested to read Sir James Dundas-Grant's letter in the *British Medical Journal* of October 1st, describing his method of treating the raw cavity remaining after certain operations on the mastoid. I have recently, by the use of a special suprapubic tube, been able to apply similar principles in the after-treatment of the raw cavity remaining at the neck of the bladder after suprapubic prostatectomy.

The tube is an ordinary rubber prostatic drain of large calibre, provided with four relatively large lateral holes. The end to be introduced into the bladder is, however, prolonged as an expansion of thin rubber sheeting, so welded as to form a spherical bag about the size of a golf ball.

After the prostate has been removed and the toilet of the prostatic cavity has been completed, in the manner described by Thomson-Walker, an indwelling catheter, if required for purposes of subsequent continuous irrigation, is placed in position. The expanded end of this prostatectomy tube is then gently placed within the prostatic cavity in front of the indwelling catheter, in such a way that its junction with the tube proper lies at the upper limit of the prostatic cavity. Down the lumen of the prostatectomy tube, adjusted as already described, narrow iodoform gauze packing is introduced with some suitable form of probe, in order to distend the expanded end of the tube within the prostatic cavity. According to the circumstances of the case the prostatic cavity can thus be packed with just that degree of tension thought necessary at the moment. Bladder suture and abdominal repair are now carried out in the usual fashion. The packing is removed within some forty-eight hours without discomfort to the patient, and any clots, the result of oozing, have so far, in my experience, readily found exit by way of the four large holes in the wall of the prostatectomy tube.

This method of after-treatment was primarily initiated for the more certain control of post-operative haemorrhage. In this respect I have already found it to be of undoubted value. The ease with which packing can be introduced and withdrawn, and, if necessity arises, can be reintroduced without pain, and therefore without the necessity for an anaesthetic, affords in my opinion a valuable method for the control of haemorrhage during the early stages of the after-treatment of prostatectomy. Furthermore, in combination with continuous irrigation, I have been much impressed by the uneventful character of convalescence, a good guarantee of satisfactory healing.

I am much indebted to Mr. Schranz of the Genito-Urinary Manufacturing Co. for his willing co-operation in the making of this tube.—I am, etc.

London, W.1, Oct. 4th. John Alban Andrews.

[1] *System of Bacteriology*, viii, 224.

Comments on Appendicitis

Sir,—In view of the correspondence last summer over "Fallen idols" I wondered if the experience of thirty years' general practice would be of interest. The acute obstructive appendicitis, so insisted upon by Professor Wilkie, is the form of appendicitis which really matters. Early diagnosis, followed by immediate operation, is the goal at which we should aim.

As regards diagnosis, this can, in my opinion, almost be made from the history—namely, an acute abdominal pain, centrally situated, coming on suddenly "out of the blue," with no time relation to the ingestion of food, most frequently starting in the small hours of the morning. The pain is usually accompanied by vomiting, which does not relieve it. It is only after a variable time—two or three hours—that pain is felt in the right iliac fossa. The appearance of the patient is flushed, but for several hours both temperature and pulse are practically normal. On palpation of the abdomen there is rigidity in the right iliac fossa and tenderness to light pressure and light percussion, especially in the region of McBurney's spot. The superficial skin reflexes over the right iliac area are markedly active, especially when testing against the other side by pinching or picking up the skin. Pressure in the left iliac fossa will cause pain in the right iliac fossa. When the appendix is situated in the pelvis the history and the appearance are the same, but the signs are very much less definite; there is in such cases a tendency to looseness of the bowels, and there may be frequency of micturition. An examination of the rectum, which in any case of doubt should never be neglected, will establish the diagnosis. It is impossible in the space at my disposal to mention differential diagnosis, but my contention is that from this history and these physical signs the diagnosis is practically certain.

During the last three or four years I have been in charge of a public school of between 400 and 500 boys, and owing to my rule that cases of abdominal pain are reported to me as soon as they occur, I have had the opportunity of seeing the cases early. They have thus been operated upon within a few hours of the commencement of the pain, and in all cases giving the described history and signs free fluid has been found in the abdomen with an acutely swollen and obstructed appendix—either from stricture or a concretion—containing foul pus and suggesting that a few more hours would have resulted in perforation. My last series of cases have been operated upon by Mr. Watson of Burnley, and the results have been so uniformly good, with a completely smooth and uneventful recovery, that I can the less understand why there should be the slightest hesitation in insisting on immediate operation. I am not a surgeon, and therefore not in a position to criticize, but I cannot help thinking that the extremely satisfactory operation results in these cases are due to a surgical technique which comprises expedition, extreme gentleness, and the absolute minimum of manipulation.

When I look back upon my cases—both sexes and all ages—during the last thirty years, I see exactly the same picture which I have described, and I can only regret that all had not the opportunity of early diagnosis and early operation, which I am confident should be the aim of all of us.—I am, etc.,

Sedbergh, Oct. 3rd. A. H. Carter.

Chronic Rheumatism

Sir,—The letter of Dr. Lionel Calthrop on this subject (July 2nd, p. 32) is a very desirable and timely contribution, raising, as it does, so many practical questions. Those interested in the treatment of rheumatic diseases will have no hesitation in agreeing that the nomenclature and classification are redundant, occasionally contradictory, and in need of simplification. It is apparent that most of the names have been bestowed from the viewpoint of anatomical joint changes, whereas there would seem to be a modern tendency to regard a disease from the aetiological aspect. It is probably felt that too much attention has been given to the pathological end-results of disease—a rather common fault in medicine—and too little to the mechanism of causation. I shall not pretend to answer Dr. Calthrop's very pertinent queries (he who could do so accurately would solve the problem of a disease that bids fair to become one of the plagues of civilization), but a few comments may not be amiss.

It seems to me that all forms of arthritis are due to a general metabolic imbalance of the body, and that this may be expressed in the form of arthritis (using the term in its broadest application) in those joints which, as a result of overactivity, disuse, or injury, have had their local intrinsic and/or supporting structures reduced to a subnormal state of vital resistance. For instance, tuberculosis, syphilis, and gonorrhoea are "general" body diseases which may well be presumed to lower body metabolism and individual function organ efficiency, thus occasionally affecting the healthy condition of one or more joints. In consequence, any joint may become the nidus of a degenerative or infective process; but I have found that if the personal history is taken carefully, some record of an injury or strain, however apparently slight, will be found to have occurred, even at a remote date, to that joint which has shown reaction to the subsequent disease. Now if we are to take metabolic disturbance as the basis of rheumatic and arthritic diseases, we must find the causes for the departure from the normal. In other words, what upsets the natural, healthy balance of the body? I think that we may take the following determinants as being the commonest, although not in this sequence: (1) toxic; (2) endocrinal; (3) local traumatic; (4) nervous.

Under toxic should be placed dietetic errors, by which I do not mean solely the quantities of foods consumed and their caloric values, but their "freshness" and vitamin content. We have to remember that a great part of the so-called civilized world to-day lives on transported, preserved, and "stale" foodstuffs, which, all scientific pronouncements to the contrary, cannot be so wholesome and nourishing as fresh comestibles—straight from the kitchen garden, as it were. Sedentary occupations, added to diet that is devitalized, predispose to intestinal stasis and toxic absorption. Dental caries, tonsillitis, appendicitis, and so on can be regarded mostly as logical sequels.

Endocrinal disturbances, particularly of the thyroid, parathyroids, and ovaries, need adjustment, and so do the consequent menstrual pains and irregularities in the female. The psycho-sexual emotional history of the patient, male or female, should receive close attention.

A record of any local trauma, no matter how slight or ancient, is worthy of investigation. It is quite common to find that undue temporary stresses and strains from severe athletics in their youth have predisposed to osteoarthritis of the spine, hips, and knees in middle-aged or elderly men. Incidentally, as it is undoubted that osteoarthritis takes a long time to develop to the stage of being visible on radiographs, I would suggest that one is quite justified in commencing active treatment to check the disease on the evidence afforded by a thorough clinical examination and the elicited symptoms, without waiting for *x*-ray changes to appear.

Nervous influences are, I believe, extremely important and antecedent to endocrine disturbances. To estimate the effect of nervous factors one must have a knowledge of psychopathology and an appreciation of the enormous control of bodily and mental health and function exercised by the unconscious mind. This carries us into the domain of psychology, particularly into that of Freudian psychoanalysis, but we must not lose sight of the fact that the activities of the unconscious partly determine in everyone the tendency to health or disease. Since intrapsychic conflict causes a lowering of nervous and physical well-being, if possible it must be alleviated in addition to applying physical methods. This presents manifest difficulties in clinic and hospital practice, but since it is almost invariably present it is a factor that should not be overlooked. Whilst it is true that the tissue products of chronic rheumatism induce a form of nervous debility, it should not be forgotten that the converse is also true.—I am, etc.,

Sydney, N.S.W., Aug. 17th. E. Haslett Frazer.

Anaesthesia for Reduction of Fractures

Sir,—In reply to Dr. H. K. Ashworth's letter in the *Journal* of September 24th, taking exception to a letter under the joint names of Dr. E. Bartleman and myself, I agree with Dr. Ashworth that expert anaesthetists—and among these I do not class the average resident in a hospital—are alone capable of giving such a degree of muscular relaxation in an unprepared patient with nitrous oxide only, that a careful reduction can be undertaken of a fracture that may need some degree of traction before the fragments are manipulated. Thus comes in one of the chief attractions of local anaesthesia in the reduction of fractures: with its aid the general practitioner does not have to have an "expert" anaesthetist in order to be able to reduce his patients' fractures under ethyl chloride or ether. This condemnation of a "whiff of gas" is duly stressed again and again in Mr. Bankart's recent book on joint manipulations.—I am, etc.,

London, W., Sept. 30th. G. O. Tippett, F.R.C.S.

End-results of Tonsil and Adenoid Operations

Sir,—The paper by Drs. Glover and Wilson on the end-results of the tonsil and adenoid operation in childhood which appeared in the *British Medical Journal* of September 10th is a very interesting and excellent review, but it cannot pass without criticism.

As Dr. Sington and Mr. O'Malley point out, it is impossible to have tonsillitis in a *completely* tonsillectomized subject. Therefore many of the cases studied must have been incompletely treated.

It is noted that the great majority of the cases under review have been living in boarding schools. No matter how healthy and strong a pupil is, be he completely tonsillectomized or not, when epidemic infections—influenza, febrile nasal catarrh, bronchial catarrh, otitis media, and the like—gain a firm hold in institutions such as boarding schools, the environment is all against the pupil, and should he get a maximum dose he develops the malady. For, as Mr. O'Malley points out, even when complete removal of tonsils and adenoids is carried out, there is a complete sheet of lymphoid tissue in the deeper layer of the mucous membrane lining the nose, nasopharynx, pharynx, and base of the tongue, any part of which in children and adolescents is susceptible to

inflammatory reactions in the presence of mass microbic infections.

Nevertheless I am convinced that in the great majority of elementary school children, and in those who live in their own homes, have parental supervision, and adequate segregation when necessary—not herded together all the time—the end-results of this operation in properly selected cases are gratifying in the extreme.—I am, etc.,

A. Mackenzie Ross, M.B.,
Ch.B., D.L.O.

Poole, Dorset, Sept. 28th.

Obituary

FLORENCE A. STONEY, O.B.E., M.D.

Bournemouth

Dr. Florence Ada Stoney, who died on October 7th at the age of 62, was the daughter of G. Johnstone Stoney, D.Sc., F.R.S., of Dublin. She was educated at the Royal College of Science, and afterwards worked for her medical degree in London, Dublin University not being open to women at that time. She graduated M.B. and B.S. with honours from the London School of Medicine for Women in 1895 and 1896, and M.D. in 1898. In recognition of her work she was given the D.M.R.E.Cantab. in 1920. She was a pioneer in *x*-ray treatment at both the Royal Free and the Elizabeth Garrett Anderson Hospitals, though radiography was then in its early stages, and little was known of precautions necessary to the safety of the operator. For some years Dr. Stoney was demonstrator in anatomy at the London School of Medicine for Women.

When the war broke out she had already had thirteen years' experience as a consultant radiologist, and offered her services to the War Office. The offer was declined, and she forthwith undertook the organization of a surgical unit, completely staffed by women, of which she was principal medical officer and radiologist, under the administration of Mrs. Stobart. The unit set out for Brussels, but was turned back, and finally reached Antwerp little more than a month after the outbreak of war. Here the staff of the unit set about converting an abandoned music-hall into a hospital with *x*-ray installation, and within five days the 135 beds were full of wounded. The work of this hospital was carried on until October, when it was one of the first buildings to be shelled in the bombardment. After being under shell fire for eighteen hours, Dr. Stoney and her staff had managed to dispatch all the wounded back behind the retreating lines, and then themselves set out to walk to Holland. Three motor omnibuses carrying ammunition picked them up, and they crossed the Scheldt twenty minutes before the bridge was blown up. The 1914 star was awarded to Dr. Stoney and her corps after this episode. By November they had been installed in new quarters near Cherbourg, but the mediaeval Château Tourlaville in which they had been housed was lacking in most of the qualities which go to make a hospital: Dr. Stoney's unit had to arrange for the water supply, for heating, and simple sanitation, and even had to generate their own electricity by water power from a stream in the grounds to supply the *x*-ray plant and to provide light for the hospital. Dr. Stoney carried on her work at the château until March, 1915, when she was one of the first women doctors to be accepted for full-time work under the War Office. Sir Arthur Keogh appointed her as head of the radiological department of the Fulham Military Hospital. More than 15,000 cases passed through her hands, many patients being sent from other hospitals for the localization of bullets and pieces of shrapnel.

After demobilization she received the O.B.E. in 1919. Until her retirement in 1928 she carried on a consultant practice in Bournemouth, serving on the staffs of two local hospitals. Afterwards she spent some time in India, studying osteomalacia and giving advice on ultra-violet light installations for hospitals. Among her published work were papers on the *x*-ray treatment of fibroids, on Graves's disease and soldier's heart, on the *x*-ray treatment of exophthalmic goitre, and on the use of ultra-violet light in the treatment of rickets and osteomalacia. In character she was quietly humorous, with a gift for steady perseverance that overcame the handicap of health which was never robust.

H. G. TERRY, F.R.C.S.Ed.,

Consulting Surgeon, Royal United Hospital, Bath

The death, on September 27th, of Mr. Henry George Terry, F.R.C.S.Ed., of Bath, at Hemyock, Devon, where he had resided since his retirement, is felt as a great personal loss by all who knew him. The son of a medical man at Mells, Somerset, and a student of Bart's, he was house-surgeon at the Royal United Hospital, Bath, assistant honorary surgeon in 1890, and senior surgeon in 1902. He was due to retire during the war, but remained on the staff, at the request of the Board, finally retiring in 1919. He rendered great service there and at the Bath War Hospital throughout the war. For many years he assisted at Bath Eye Infirmary ; he was always devoted to his work, and his one recreation was fishing.

C. E. S. F. writes: Terry's technical skill, sound judgement, and good common sense soon won for him the esteem of the profession, and for many years he was the leading surgeon in Bath, where his opinion and help were much sought after. A man of sterling honesty, to him right was always right, and wrong was wrong, and there was nothing between the two. He was a genuine and real friend to colleague and patient alike. His wife died suddenly when he was leaving Bath, and this no doubt affected the whole of his retired life. He leaves a daughter, and a son who is now senior surgeon of the same hospital.

The University of Otago, N.Z., and the medical profession in Dunedin have suffered a severe loss in the death of Dr. Frederick Ratcliffe Riley, the first professor of obstetrics and gynaecology in the university, who died after a short illness on August 1st, aged 67. A Devonshire man, Dr. Riley qualified from the London Hospital in 1890, and became F.R.C.S. in 1896. He first went to New Zealand in 1892, where he practised in the country for some years and ultimately settled in Dunedin. In 1909 he was appointed lecturer in his subject at the medical school, and after twenty years' service was given the title of professor. He retained his country interests, and owned a large sheep run in central Otago, where he much enjoyed entertaining his friends. He was a man of most kindly disposition to whom many of his juniors owe a great deal for help in their early days. As a gynaecological surgeon he used to obtain good results, though he contributed little to the literature, and his devotion to his students earned him the title of "father" among them. He served for a time on the city council, and was for a long period an elder of his church. He is survived by his widow and four children; two of his sons are studying for their father's profession.

We regret to announce the death on October 3rd, after an operation at Queen Mary's Hospital, Roehampton, of Dr. Leonard Robert Tosswill, who had a distinguished record in the war and was a famous Rugby footballer. A son of Dr. L. H. Tosswill of Exeter, he was born in January, 1880, and from Marlborough College went to study medicine at St. Bartholomew's Hospital, where he won the Jaeffreson Exhibition. He qualified as M.R.C.S.,

L.R.C.P. in 1903, and obtained the D.P.H.Oxon. in 1909, after a period of post-graduate study in Berlin and Vienna. For some years he was an assistant medical officer in the Public Health Department of the London County Council, and then became senior assistant M.O.H. and school medical officer under the Devon County Council, and assistant-surgeon to the West of England Eye Infirmary, Exeter. He served for over twelve years in the R.A.M.C.(T.F.), including the period of the war, when he went to France with the 1st Division and served for two and a half years as D.A.D.M.S.(San.) at the headquarters of the 4th and 5th armies. He also served as specialist sanitary officer, H.Q. Eastern Command. He was twice mentioned in dispatches, and received the O.B.E. (Mil.). On retiring from the Army with the rank of Major he was appointed Deputy Commissioner of Medical Services at the Ministry of Pensions. In his football days Tosswill played for Bart's and Middlesex County, and later for Devonshire, and he represented England in all three international matches in 1902. When the British Medical Association met at Exeter in 1907 he was co-honorary secretary of the meeting with Mr. Russell Coombe; and at the Sheffield meeting in the following year he was honorary secretary of the Section of Ophthalmology.

We have to announce the recent death in London, in his sixty-first year, and after a serious operation, of EDWARD FISK, M.D., of Ramsgate. Dr. Fisk was born at St. Albans and was trained at Guy's Hospital. He qualified for the gold medal in the London M.D. examination in 1900, and was afterwards surgeon to the Ramsgate General Hospital and Seamen's Infirmary, and consulting surgeon to the Ramsgate and St. Lawrence Royal Dispensary. A colleague writes: In the death of Dr. Fisk Ramsgate has experienced a serious loss. His exceptional attainments in medicine, his judgement and skill in surgery, and his devotion to work at the Ramgate General Hospital have been an acknowledged asset to the town and district for thirty years. His gentleness and kindness to all, his utter modesty, combined with rare abilities, won the confidence and esteem of all his fellow practitioners, and the respect and affection of all classes.

The *Journal of the American Medical Association* for September 4th announces the death in Chicago, in his eightieth year, of Dr. FRANK BILLINGS, who was twice president of the American Medical Association.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

Professor Barcroft has appointed Mr. G. S. Adair, M.A. (King's), as an assistant director of physiological research for five years.

UNIVERSITY OF LONDON

Her Majesty the Queen has signified her intention of opening the new building for College Hall, London, which has now been completed in Malet Street, W.C. The ceremony will take place on the afternoon of Thursday, November 10th.

UNIVERSITY COLLEGE

Two lectures on "Sinanthropus" will be given by Dr. Davidson Black, F.R.S., of the Peiping Union Medical College, China, on December 9th and 12th, at 5.30 p.m., with lantern illustrations. Professor G. Elliot Smith will take the chair at the first lecture.

Sir Charles Sherrington, O.M., G.B.E., F.R.S., late Brown Professor in the University, will give two lectures on "Reflex action" on dates to be announced later. A film will be shown at the second lecture.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

The following candidates have been approved at the examination indicated:

ACADEMIC DIPLOMA IN PUBLIC HEALTH.—L. P. Clarke, Dorothy Makepeace, T. L. Narayana, Doris G. Sharvelle.

UNIVERSITY OF LIVERPOOL

The following candidates have been approved at the examination indicated:

DIPLOMA IN PUBLIC MEDICINE.—L. G. Anderson, F. J. H. Crawford (with distinction), C. L. Emmerson, H. P. Fowler, G. A. Fulton.

UNIVERSITY OF GLASGOW

The following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—M. Abrahams, W. Aird, A. M. Aitken, J. C. Aitken, O. A. Ajose, J. W. Barclay, J. B. Barr, Catherine H. S. Begg, B. Binnie, J. W. Bone, I. C. Boyd, F. W. Bunting, Elizabeth L. Cairncross, J. A. Carson, E. D. Cooper, J. M. Cowan (Glasgow), J. M. Cowan (Whitley Bay), A. Cubie, Alice E. Dickie, A. H. Dickie, P. Drake, R. M. Dykes, S. R. Fee, G. A. Fitzpatrick, R. T. Fletcher, W. F. Flint, R. D. Forsyth, W. Fraser, J. M. Frew, A. F. A. Gallen, T. A. Gillie, Helen M. Gilmour, J. M. Graham, W. A. Heggie, D. W. Hendry, R. Hill, M. E. Hocken, J. L. Horne, D. B. Jack, G. A. Jones, T. D. Junor, Elizabeth B. Kay, R. B. Kennedy, Agnes T. Kennie, J. M. Kirkwood, R. Leishman, D. W. Lindsay, J. M. Liston, D. L. Little, A. M'Arthur, G. M'Bride, Jeanie C. Macdonald, A. H. M'Geachy, N. J. L. MacKinven, H. MacNeill, R. G. M'Whinney, A. Marillier, Alwyn L. Miles, E. Miller, J. C. Miller, T. B. Milne, W. M. Nichols, F. J. O'Gorman, G. Pollock, J. C. Reid, A. Robertson, A. Ross, W. W. Sinclair, A. S. R. Stewart, A. M. Sutherland, A. B. Taylor, A. M. Thomson, F. W. Whiteman, A. Whyte, W. S. Wilson, R. H. Wiseman, I. Yaffie, N. Young.

The Services

DEATHS IN THE SERVICES

Brevet Colonel Percy Herbert Johnston, C.M.G., R.A.M.C. (ret.), died at Calder Bridge, Cumberland, on August 13th, aged 81. He was born at Cawnpore on July 13th, 1851, the son of Surgeon Major J. W. Johnston of the Army Medical Department, and of the 70th and 85th Foot, and was educated at Queen's College, Cork, and in Dublin, graduating M.D. and M.Ch. of the Queen's University, Ireland, in 1875. Entering the Army as surgeon in February, 1877, he became surgeon lieutenant-colonel after twenty years' service, and retired in July, 1906. He was promoted to Brevet Colonel in January, 1918. He served in the Afghan war of 1878-80, taking part in the Zaimukht campaign, and the assault and capture of Zawa (medal); in the Hazara campaign of 1888 on the North-West Frontier of India (medal with clasp); and in the South African war of 1899-1902, in charge of a general hospital, with the local rank of colonel, when he was present at the action of Tugela Heights, the relief of Ladysmith, and at operations in the Orange River Colony and in Cape Colony. He was four times mentioned in dispatches—in Sir George White's dispatch of December 2nd, 1899, in Sir Redvers Buller's dispatches of March 30th and November 9th, 1900, and in the *London Gazette* of February 8th, 1901—and received the Queen's medal with four clasps, the King's medal with two clasps, and the C.M.G. During the war of 1914–18 he served as senior medical officer, Mersey Defences. In 1926 the National University of Ireland conferred on him the honorary degree of D.Sc.

Lieut.-Colonel Sandford Moore, R.A.M.C. (ret.), died at Shankhill, co. Dublin, on August 22nd, aged 89. He was born in co. Longford on July 12th, 1843, and was educated at Trinity College, Dublin, where he graduated B.A. and M.B. in 1866. Entering the Army as assistant surgeon on October 2nd, 1866, he became surgeon major after twelve years' service, and retired with an honorary step of rank as brigade surgeon on February 22nd, 1887. As a regimental officer he served in the 4th Dragoon Guards. From 1882 to 1886 he held the post of assistant professor of hygiene in the Army Medical School at Netley. He served with the Woolwich ambulance in the Franco-Prussian war of 1870–1, was present in the engagements at Château Neuf, Bretoncelles, and Artenay, and received the Prussian war medal and the French bronze cross. He also served in the Ashanti war of 1873, was at the action of Essaman, and received the medal.

Lieut.-Colonel Arthur Gervase Hendley, Bengal Medical Service (ret.), died at Perth on September 18th, aged 66. He was born on June 26th, 1866, the third son of the late Surgeon General John Hendley, C.B., Army Medical Department, was educated at Bart's, and took the M.R.C.S. and L.R.C.P.Lond. in 1887. Entering the I.M.S. as surgeon on March 30th, 1889, he became lieutenant-colonel after twenty years' service, and retired on June 26th, 1909. After his

retirement he was for some years bursar and medical officer of Glenalmond School. He rejoined for service in the war of 1914–18, joining as a captain in the R.A.M.C.(T.F.) on August 11th, 1915, and retiring with the rank of lieutenant-colonel on September 30th, 1921. He served in the North-West Frontier campaign of 1897–8, receiving the medal with a clasp. Most of his service in India was spent in civil employ in the Central Provinces.

Surgeon Major Richard Colville Parkinson died at Southsea on August 4th, aged 89. He was born at Guildford on February 8th, 1843, was educated at Guy's, and took the L.R.C.S.I. in 1865. Entering the Army as assistant surgeon on April 1st, 1867, he became surgeon on March 1st, 1873, when the rank of assistant surgeon was abolished, surgeon major on April 1st, 1879, was placed on half-pay on September 7th, 1881, and retired on January 14th, 1882, over half a century ago. He served in South Africa in the Boer war of 1881, took part in the defence of Standerton, as senior medical officer of the garrison, and was mentioned in dispatches.

Major James Edward Hoar, R.A.M.C. (ret.), died on August 31st, aged 52. He was born on March 5th, 1880, was educated at the London Hospital, and took the M.R.C.S. and L.R.C.P.Lond. in 1905. Entering the R.A.M.C. as lieutenant on January 31st, 1905, he became major on October 15th, 1915, and retired on January 31st, 1925, when he joined the Reserve of Officers, and had recently been re-employed at Woolwich. He served in the war of 1914–18, and was mentioned in dispatches in the *London Gazette* of May 25th, 1916.

Medical News

A public lecture under the Chadwick Trust on "The pioneers and progress of preventive medicine" will be given by Sir Humphry Rolleston in the theatre of the Royal United Services Institution, Whitehall, S.W., on Thursday, October 20th, at 5.15 p.m. Sir William Collins, chairman of the Chadwick Trustees, will preside. At 5 p.m. the Chadwick gold medal and prize for excellence in municipal engineering and hygiene will be presented to Mr. Alasdair Robe.

The next meeting of the Royal Microscopical Society will be held at B.M.A. House, Tavistock Square, on Wednesday, October 19th, at 5.30 p.m. Mr. Dallas Hanna will read a paper entitled, "Suggestions for a new series of objectives."

The South-West London Medical Society commences a new series of lectures on October 26th, when Professor W. Langdon Brown will discuss allergy and some allergic diseases. On November 9th Dr. J. A. Torrens will lecture on the treatment of certain common medical conditions. A discussion on the treatment of the enlarged tonsil in children will be opened by Mr. T. B. Layton and Mr. H. M. Wharry on December 14th. The session will conclude with the Bolingbroke Lecture on June 14th, 1933, by Sir D'Arcy Power, entitled "Some great English surgeons; what they did and what they looked like," illustrated by lantern slides. The meetings are held at the Bolingbroke Hospital, Wandsworth Common, S.W.

In January, 1930, the council of the Child-Study Society, London, resolved that a Cockburn Memorial Lecture be instituted for a period of three years, in the next three autumn sessions, to mark Sir John Cockburn's life-interest in child study and the training and education of childhood. The first of these lectures will be delivered at the Royal Sanitary Institute, 90, Buckingham Palace Road, S.W., on Thursday, October 20th, at 6 p.m., by Dr. P. B. Ballard, whose subject is "Thirty years' progress in London education."

The Royal Institute of Public Health has arranged two courses of lectures in the lecture hall of the Institute, Queen Square, W.C.1, which are free to all interested in the subjects to be dealt with. One course, on the maintenance of health and the avoidance of disease, will be held on Wednesdays at 4 p.m., from October 19th to December 7th, and will include such topics as food and nutrition problems; cancer and the general practitioner (cinema demonstration); the prevention of mental disorders, crippling in childhood and youth, and tuberculosis; the education of public opinion; the role of the hospital almoner; and the relation of eugenics to the maintenance of health. The other course will be devoted to mental defectiveness as a medico-sociological problem, and will be held on Thursday afternoons at 4 o'clock from October 27th to December 1st. The subjects include the medical and social considerations involved; the aetiology, physiological basis, and medico-legal aspects of mental deficiency; protective measures, such as segregation and sterilization; and the mentally subnormal in everyday life. Further information may be obtained from the secretary of the Institute, 23, Queen Square, W.C.1.

On Friday, October 28th, at 8.45 p.m., Sir Buckston Browne, F.R.C.S., will give an informal address at the East London Children's Hospital, Shadwell, on "Lessons to be learnt from a study of the Darwin family." Visitors are cordially invited.

The Institute of Medical Psychology (formerly the Tavistock Square Clinic) has arranged a short course of lectures on functional nervous disorders, for practitioners and medical students, from November 7th to 19th. It will be given at the Institute's new premises, Torrington Place, W.C. Fee for the course: medical graduates, £2 2s.; medical students, 10s. 6d. Tickets to be obtained in advance from the honorary lecture secretary, at 51, Tavistock Square, W.C.1. The Institute announces that the waiting list, which has been closed, is now reopened. Those patients who are in a position to attend early in the day are likely to obtain priority over others.

The next monthly clinical meeting for medical practitioners will be held at the Hospital for Epilepsy and Paralysis, Maida Vale, W.9, on Thursday, October 27th, at 3 p.m., when Dr. Blake Pritchard will demonstrate peripheral neuritis. Tea will be provided, and it will be a convenience if those intending to be present will send a card to the secretary.

The annual general meeting of the West Kent Medico-Chirurgical Society will be held at the Miller General Hospital, Greenwich, to-day (Friday) at 8.45 p.m. It will be followed by a clinical evening.

The winter session of the post-graduate school of the Hampstead General and North-West London Hospital will open on Wednesday, October 26th, at 3 p.m., when Sir Ernest Graham-Little, M.P., will give an address on the voluntary hospitals and their future. The chair will be taken by Sir William Collins.

A post-graduate course in modern methods of treating diseases of children will be held at Vienna from November 28th to December 10th, and will be followed by special clinical instruction in certain hospitals. Details may be obtained from Dr. A. Kronfeld, Porzellangasse 22, Vienna IX.

The Fellowship of Medicine and Post-Graduate Medical Association has arranged a series of lectures on renal disease at the Medical Society of London, 11, Chandos Street, W.1, on Tuesdays at 4 p.m.; the first will be given by Dr. E. C. Warner on October 18th, on medical aspects of haematuria. These lectures are free only to members of the Fellowship. A fortnight's course in general medicine and surgery will be given at the Miller General Hospital, Greenwich, from October 17th to 29th, occupying the whole of each day; a morning course in diseases of children at the Hospital for Sick Children, Great Ormond Street, from October 24th to November 5th; a course in neurology at the West End Hospital for Nervous Diseases at 5 p.m. daily from October 31st to November 26th; and an afternoon course in ophthalmology at the Royal Westminster Ophthalmic Hospital from October 31st to November 19th. A course in uterine infections in obstetrics and gynaecology is given at St. Mary Abbots Hospital every week. A panel of teachers is available for personal tuition in almost all branches of medicine and surgery; these clinics may be attended by arrangement with the Fellowship of Medicine, 1, Wimpole Street, W.1. A course in practical pathology is being arranged at the Brompton Hospital, and details will be announced shortly.

On October 7th Sir Philip Magnus, Bt., celebrated the ninetieth anniversary of his birth. He was Member of Parliament for London University from 1906 to 1922, and in 1920, in recognition of his services to medicine in Parliament, he was made an honorary member of the British Medical Association.

A special St. Luke's Day service, to which all medical practitioners and nurses are invited, will be held in Bradford Cathedral on Sunday, October 23rd, at 3 p.m.; preacher: The Bishop of Middleton.

The annual general meeting of the Medical Sickness Annuity and Life Assurance Society will be held at the First Avenue Hotel, High Holborn, W.C., on Wednesday, November 16th, at 4.30 p.m.

The first Congress of Mediterranean Hygiene was inaugurated on September 20th by the Ministre de la Santé Publique in the presence of 250 members—representatives of France, Great Britain, Denmark, Spain, Portugal, Italy, Greece, Yugoslavia, Rumania, Egypt, and Turkey. During the congress many interesting communications were read. At the special invitation of the Italian Government, represented by Professor Dante de Blasi of the University of Naples, the congress will meet again in three years' time in Italy.

The Automobile Association has published a map showing the garage accommodation available within a radius of one mile from Olympia. It can be obtained free by members on application to the A.A., Fanum House, New Coventry Street, W.1.

Sir Truby King, C.M.G., M.B., former Director of Child Welfare in New Zealand, has presented his home in Wellington to be converted into a maternity hospital.

The programme for the 1932–3 session (October 18th to March 14th) of the British Institute of Philosophy has been received. Full syllabus and forms of registration can be obtained on application to the director of studies, Institute of Philosophy, University Hall, 14, Gordon Square, London, W.C.1.

A sympathetic obituary notice of Sir Ronald Ross, by Professor F. K. Kleine of Berlin, appears in the issue of the *Deutsche medizinische Wochenschrift* of September 30th.

In the returns for 1930 the vital statistics of European officials in East Africa are presented in a somewhat modified form. The age grouping has been rearranged, the figures for male and female officials are stated separately, and a new table has been added, showing retirements on pension and deaths among pensioners since 1917. Deaths have fallen from 5.0 per 1,000 in 1929 to 4.34 (a rate little in excess of the lowest yet recorded—namely, 4.1 in 1924), and invalidings from 7.5 to 4.7. Only six of the twenty-three deaths and six of the twenty-five invalidings were directly due to tropical disease.

A review of recent advances in dermatology during the past twelve months appears in the current (October) issue of the *Prescriber*.

A new edition (the twentieth) of vol. i of Martindale and Westcott's *Extra Pharmacopoeia*, revised and brought up to date by W. Harrison Martindale, Ph.D., is published this week by H. K. Lewis and Co., Ltd. (price 27s. 6d., post free, 28s.)

Two interesting sound films of the "animated diagram" type were shown at a demonstration given by the Western Electric Company at Bush House, London, on October 5th. One, dealing with uterine prolapse, showed in an admirably clear manner the development and operative treatment of this condition. The second described animal experiments on the production and relief of diaphragmatic hernia. Both films were of the "lecture-demonstration" variety, and, though simple in character, gave promise of definite teaching possibilities by this method.

The Board of Control, Caxton House West, Tothill Street, S.W.1, has issued a revised list of medical practitioners in England and Wales who have been approved by the Board for the purpose of making recommendations under Sections 1 (3) and 5 (3) of the Mental Treatment Act, 1930.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, B.M.A. House. Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are MUSEUM 9861, 9862, 9863, and 9864 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Medisecra Westcent, London.*

The address of the Irish Office of the British Medical Association is 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 24361 Edinburgh).

QUERIES AND ANSWERS

A Papular Eruption

Dr. G. A. CAMPBELL (London, N.) writes: I would be grateful if any member could suggest a remedy for a patient of mine who suffers from a crop of very small papules of a cystic nature, though some have a warty appearance. The distribution is on the neck, back, and front of the chest. I have been excising them, but it is very tedious, and I would like to avoid any scarring.

Ossification of Costal Cartilages

Dr. M. W. PLATEL (Bolton) writes: Can any reader enlighten me regarding the causation and treatment of ossification of the costal cartilages in a young married woman, aged 34? Radiography reveals that all the costal cartilages present a marked degree of calcification, more so on the left side. Apart from pain and slight swelling on the left side no other signs and symptoms of disease are evident.

Bowel Control after Colostomy

Mr. W. B. GABRIEL (London, W.1) writes in reply to "Cristobal Colon's" query: I should suggest that he discontinues the daily wash-out. This routine does not suit every patient, and it will be worth while to see if this patient's colostomy can be made to act naturally. A teaspoonful of i-so-gel (Allen and Hanburys) given to the patient at night has a favourable effect in the way of producing formed motions, which are passed cleanly from the colostomy and can be wiped away without annoyance to the patient. If a mild aperient is required in addition, a teaspoonful of liquid paraffin, or a few drops of cascara evacuant, can also be given at night. The diet should be a soft one, free from roughage; porridge, green vegetables, and fruit should be avoided until the habit of satisfactory and regular colostomy evacuations after breakfast has been acquired.

"E. D." writes: Omit the overnight evacuant and allow the patient to rise early, say, 7 a.m. On the exceptional occasions when an aperient is required give him two teaspoonfuls of effervescing sulphate of soda before breakfast; after breakfast, enema. Economize neither in time nor in water, and finish up by catheterizing bowel with a rubber rectal tube. As far as possible use belt and rubber cup, but, at the period of danger, replace cup by a celluloid cup and small rubber bag without vent. That means the bag will be worn for about four hours out of the twenty-four. Some belts are made with a hole which will take either celluloid or rubber cup. Ordinary diet, but better avoid soups (except milk soup), oil, asparagus, peas, French beans. Not necessary to be a teetotaler, but the less beer or stout the better. Insert a strip of cotton-wool inside left upper border of belt, and when rubber pad is worn, another just inside lower border. Attach napkin so that it will hang from just above belt to half-way down left thigh.

"Refractory Impetigo"

"M.D." writes, in answer to Dr. L. I. Hardy's inquiry (September 10th, p. 538): I have never found a case of true impetigo fail to clear up quickly on the following old-fashioned prescription: argent. nitras, grains xv, sp. aeth. nitros., ad ʒ i. Two or three applications are needed at daily intervals, all scabs having been removed before the first application. The silver solution deposits a brown stain, but this soon wears off. One need hardly point out how much cleaner this treatment is than the usual "messy" ointments.

Softening the Beard

Dr. A. L. Martyn (Crantock), in reply to "W. D. B.'s" inquiry, recommends sponging the face with very warm water and using a simple bristle brush previously softened by five minutes' immersion in hot water. Soap can be rubbed on first, but an improvement on this is to use a good shaving cream on the brush. He writes: Then gently work up a thick lather of medium consistency, but on the wet side. Avoid running the razor edge at too acute an angle. Bring the haft of the blade to the face and, if the edge be good, a minimum of irritation is produced. The circular, or scythe, method is desirable. All safety razors tend to drag the skin—the oblique cut is the easy cut. A highly tempered, first-class blade razor is always preferable to the visiting-card type of safety. I shall always remember the torment I went through when a safety razor was used on me by a well-meaning and zealous dresser prior to a surgical operation which I underwent.

"M. D. C." writes: If "W. B. D." will add a few drops of glycerin to the final lathering shaving will be much more comfortable.

Income Tax

Depreciation Allowance : Car

"H. E. N." is in some doubt as to whether it is advisable in the long run to claim "depreciation"; his accountant advises him to claim "renewals" instead.

*** With respect we differ from "H. E. N.'s" accountant. It is true that if the rate of tax falls then the taxpayer may lose by having partly anticipated the renewal claim, but even then he will have had the use of the difference in tax for a year or two. On the other hand, where depreciation is not claimed, the practitioner on death or retirement will have a partially used car for which he has claimed, and can claim, no allowance. To some extent this happens through the falling price of cars. For instance, "H. E. N." bought a 12-h.p. car in 1927 for £400 and is now replacing it by a 9-h.p. car at £300. He has had (£400 − £134 =) £266 allowed him for depreciation, and will now get the excess of the £134 over the cash selling price as obsolescence—say, (£134 − £50 =) £84—that is, he will have had total allowances of £266 + £84 = £350. A "renewals" claim would give him only £300 − £50 = £250.

Resident Abroad

"Perplexed" resides abroad. Last year his total income (from investments) amounted to £887, from which was deducted £65 income tax. Can he reclaim all or some of this amount?

*** A person residing abroad remains liable to tax in respect of income—other than 5 per cent. War Loan—arising in the United Kingdom or Northern Ireland. He is, however, entitled to personal allowances, or rather to such proportion of them as his British income bears to his total income. Whether "Perplexed" can claim any repayment therefore depends on that proportion. If the whole of the British income is taxed in full he will certainly have some claim. The claim is usually somewhat troublesome, and he might do well to take expert advice on the actual facts—say, from the income tax department of his bank.

Deductible Expenses

"W. A. B." inquires where he can find information with regard to all the allowances and expenses that can be claimed by a medical practitioner.

*** There is a chapter which will give "W. A. B." what he seeks in a book published by Crosby Lockwood and Son at 4s. 6d., under the title of *Income Tax and the Professional Man*.

LETTERS, NOTES, ETC.

Electric Heating Pads

Mr. A. V. Summers, engineer and manager, "Thermega" Limited, replying to Colonel R. H. Elliot's letter on the above subject (*Journal*, October 1st, p. 652) points out that the accidents complained of have been caused by the failure of the flexible cable, apparently due to the type of three-heat control switch used in it. He writes: It must be remembered that the flexible cable of any electrical appliance is the part which receives most wear, and should accordingly be periodically examined, when most of such cases would obviously be avoided. The "Thermega" Company has always adopted a large switch of entirely different type, with ample room for holding and operating, and special flexible cable.

Mr. F. W. Read (director, Medical Supply Association, Ltd.) writes: In this business we have been called upon to supply several thousands of electrical heating pads, and throughout the whole of our time we have never had any experience such as that referred to by Colonel Elliot. We think it would be difficult to see how a really serious fusing of the wires could have taken place had Colonel Elliot's circuit been guarded by the usual safety fuse which is invariably installed.

Lieut.-Colonel R. H. Elliot writes: My letter in your issue of October 1st has brought me a number of replies from manufacturers which show clearly that others have appreciated the risks I pointed out, and that some at least of the electric heating pads are now provided with a foolproof switch and with proper insulation of the flex. These were the two points I called attention to. After the experiences quoted in my previous letter I would urge that no medical man should prescribe an electric pad without making sure that these essential requisites are complied with.

Inventions Great and Small

This year's Exhibition of Inventions, which has been open for the last ten days at the Central Hall, Westminster, is of particular interest in regard to the occupations of the inventors. Thus, to a "medical specialist" we owe an appliance for preventing hoax calls to the fire brigade, and to a dentist an electrically heated cabinet for drying clothes. Inappropriately enough, a verger has invented a loud speaker, while a barrister is responsible for pneumatic boots. A knee-pad, waterproof on the outside and lined with warm material to avoid chill, a check to prevent the slamming of the door or the rattle of the casement window, a box from which a match can be obtained by the use of one hand only, a scooter to carry one's suitcase, and a rubber silencer for the bottom of milk churns are amongst the other inventions. For motorists there are: collapsible shutters for controlling the temperature of the radiator; a glass for headlamps which absorbs the dazzling rays of light while allowing the horizontal rays to pass unimpaired; a safety device which instantaneously locks the whole group of nuts holding the wheel to its hub against vibration and rotation; and electrical means, operated without removing the hand from the steering-wheel, for the distribution of grit on the wheel's track just before braking or cornering. As for motor-car thieves, one device automatically locks all the doors, the bonnet, and the gear lever, disconnects the ignition and lighting system, and applies the brakes; while another, when any unauthorized person attempts to drive the car, causes the word "stolen" to appear on an illuminated metal plate. It should be added that this is the eighth year of this exhibition, which includes inventions from Germany and other European countries, the United States, and the British Dominions.

Corrigendum

In our annotation entitled "Research on food problems" (*Journal*, October 8th, p. 682, line 10), 106 was printed in error for 10^6 in recording the number of organisms present per square centimetre of meat surface.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 53, 54, 55, 58, and 59 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 56 and 57.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 211.

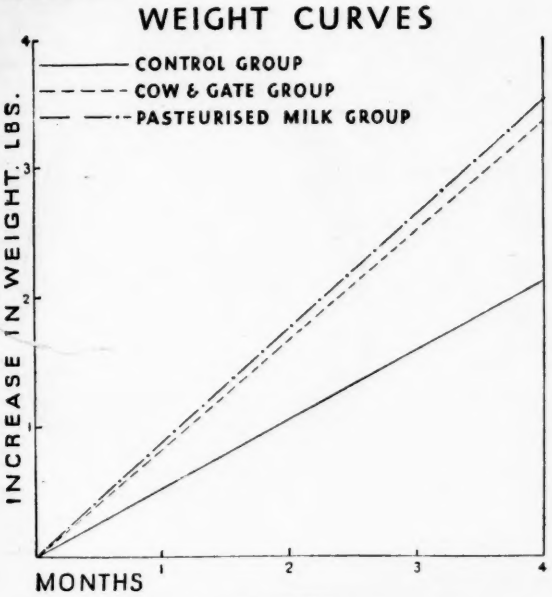
Growth-producing factors in Roller Milk Powder

It has often been suggested that the heat process employed in powdering milk by the Roller Process must necessarily involve damage to the growth-promoting factors in milk.

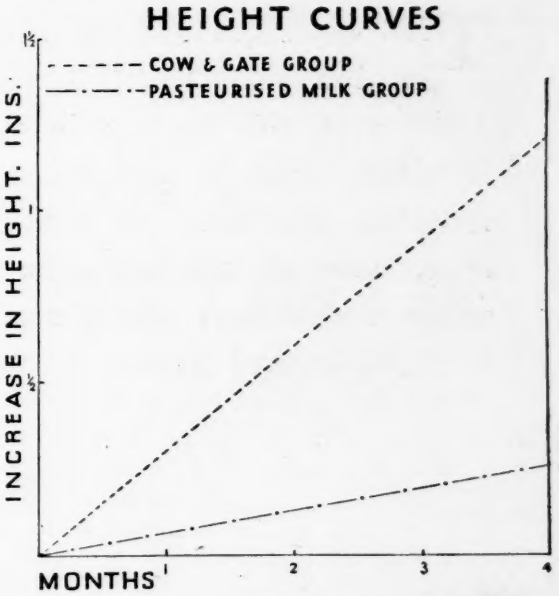
A recent experiment at the Princess Beatrice Centre, Fulham, demonstrates that an additional ration of milk to the home diet resulted in an increase in height and weight, and, in the case of the group fed on Milk Powder, a marked increase in height.

Cow & Gate Full Cream Milk Powder was used in this social experiment, which has demonstrated that the Improved Roller Process, with its rapid heat treatment, does not damage the growth-promoting factors, vitamins, and soluble calcium in the original fresh milk.

WEIGHT CURVES



HEIGHT CURVES



MANUFACTURERS OF THE Cow & Gate Milk Food CELEBRATED COW & GATE MILK FOOD

COW & GATE LTD.

GUILDFORD SURREY

©307

Full information of the Cow & Gate Improved Roller Process used in the preparation of all the Cow & Gate Milk Foods and clinical samples of these will gladly be sent on request. We should like you particularly to try our new product, Chocolate Milk which is especially suitable for the growing child.

Valentine's Meat-Juice

In the Gastric Form of Influenza and its Debility, in Typhoid and Acute Pneumonia, in the Exhaustion of Phthisis and Pulmonary Diseases, Valentine's Meat-Juice Sustains and Strengthens.

When Other Food Fails

THE quickness and power with which VALENTINE'S MEAT-JUICE acts, the manner in which it adapts itself to and quiets the irritable stomach, its agreeable taste, ease of administration and entire assimilation recommend it to physician and patient.

VALENTINE'S PREPARATION
NUTRIO PER ME
VOLUME 1 4/5 OZ.
MEAT JUICE
The result of an Original Process of preparing Meat and extracting its Juice by which the elements of nutrition are obtained in a State ready for immediate absorption.
DIRECTIONS. Dissolve one teaspoonful of the Preparation in three tablespoonfuls of cold or warm water; boiling water changes the character of the preparation.

Physicians are invited to send for brochures containing clinical reports.

For sale by European and American Chemists and Druggists.

VALENTINE'S MEAT-JUICE COMPANY,

Richmond, Virginia, U.S.A.

WB 301

Printed and published by the British Medical Association, at their Office, Tavistock Square, in the Parish of St. Pancras, in the County of London.